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Technical Grades and Dry Wettable Concentrates **Bust Base Concentrates** Emulsifiable Concentrates Solvent Concentrates

General Chemical Technical Grade DDT is available in either the finely ground or the small, thin flake types that insure easy handling and processing in your milled or oilbase products. The flake type offers processing efficiencies and economies that are well worth investigating. Samples available.



General Chemical's DDT materials are developments of research, production and quality control facilities that are among the nation's foremost. This combination-together with nearly half a century of experience and leadership "in insecticides"-is your assurance that you will always obtain DDT materials of uniformly high quality on every purchase from General Chemical. For your needs . . . write or phone nearest General Chemical Office below.

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"Jhat's Interesting"

New Odors and Flavors from Silicon

New perfumes, flavors and dyes, fashioned chemically out of silicon, are possible through a new class of compounds reported by Drs. E. H. Weller and S. H. Bauer of Cornell University.

A preliminary exploration forecasts a series of silicon compounds that parallels in many respects the aromatic compounds responsible for many synthetic odors and colors.

The Cornell scientists have made measurements upon a silicon ring in many respects comparable to the benzene ring of carbon. This "siloxane" ring has the full name of hexamethylcyclotrisiloxane. Whether the siloxane ring will form sweet-smelling compounds as the benzene ring does is not yet known. The Cornell scientists say that the chemical they measured is only the first of a series analogous to the carbon polymers. (Aminco Lab. News—Jan. '48—American Instrument Co., Silver Spring, Md.)

Movie Shows How Motorized Hand Trucks Perform

A sound motion picture portrays the transition from completely manual trucking methods to the modern, effortless mechanized systems. The two-reel 18-minute, black-and-white film illustrates operations performed with hand-controlled motorized tractors, lift and stacking trucks. It shows how pallet type units handle skid and pallet loads; tractor in use with trailer train; Hyskid units handling units of various heights; also platform and pallettype units tiering and hauling skid and pallet loads respectively The films are available through the home and branch offices of the truck manufacturer. (Automatic Transportation Company, 73 W. 87th St., Chicago 20, Ill.)

British Developing Synthetic Detergent Cakes as Soap Substitutes

It is reported that synthetic detergents in tablet form are being designed to function as substitutes for washing or toilet soap cakes in Britain. At present it can be said that nothing approaching 100% success in this direction has been noted, even though some promising preparations have appeared. One of the best of the new products gives a fair but fragile lather and seems to possess reasonable detergent properties. They are definitely not as good a cleanser as soap. The feeling on the skin may be described as that of a well made scouring tablet rather than that of soap. The problems of formulation are more difficult than might be expected. A chief fault which would have to be overcome is friability. The choice or elaboration of a really good binding agent seems to present the greatest difficulty. A number of British and several U. S. Patents are cited. (From Soap, Perfumery and Cosmetics, — British — December, p. 1205 — and as summarized in Digest, Vol. 1 No. American Soap & Glycerine Producers, Inc., New York 17,

Columbian Government to Expand Alkali Industry

Plans for expanding the recently established alkali industry in Bogota area have been announced by representatives of the Institute de Fomento Industrial, Columbia governmental agency in charge of the nation's industrial program. A building program is planned that will run into 1952. When completed, facilities will provide basic alkali products to industrial interests in the Columbian interior.

The expanded program will give Columbia an alkali industry with production units comparable in size to some in the United

Salt will be pumped eight kilometers to the plant in brine form. (As reported by H. K. Ferguson Co., Cleveland, New York-Houston, who are in charge of designing and construction of the project.)

(Continued on next page)

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4659 DDT Materials	V Key Product	V Key Product	
4660b Stainless-Steel 823	4717 N-Bromosuccinimide		V Key Product
470c Bag Closing Machines	4736 Sirdnydropyran Steam Cleaning Liquid Com- Steam Cleaning Liquid Com- Dound 1737 Neutronyx Agents 1738 Insulated Pipe Units 1742 Sirang Insulated Pipe Units 1742 Sodium Sulphide 1742 Sodium Sulphide 1742 Sodium Sulphide 1743 Sirang Seal Cocting 1744 Toxophene Water Emulsions 1745 Fatty Acid Esters 1746 Rare Chemicals 1747 Bark Products 1747 Bark Products 1748 Synthetic Resin (802-A-Pale) 1750 Intermediates 1751 Corrosion-Resistant Fasteners 1752 Chrome Yellows 1753 Corposion-Resistant Fasteners 1754 Pontaerythritol Specify Data Desired) 1755 Pontaerythritol Plan 1756 Pontaerythritol 1757 Steam House 1758 Sight-Feed Bubblers 1759 Sight-Feed Bubblers 1750 Ji Burner Control 1752 PH Controllers 1753 Onization Chamber 1754 Adjust Angle Thermometers 1755 Adjust Angle Thermometers	ressure Regulators fold Testing Cabinet Agod John Steel Plate Work Agod Desired For Desired Agod Desired For Desired Agod Desired For Determining Economical Thicknesses of For Regid Method for Determining Economical Thicknesses of Bill Descript data Desired Bill Descript data Desired Bill Conveyors Bill Conveyors Bill Testing Steves Conveyors Bill Conveyors Conveyors	4820 "Drying Problems" 4821 Bulk-Flo Conveyors 4822 Fastenings 4824 Valves Catalog 4824 Valves Catalog 4825 Diaphragm Pumps 4826 Weighing Tank 4827 Heating Jackets 4828 Pow-Flruck Elevators Bulleti 4829 Food Processing Pumps 4830 Sproy Nozzles 4831 Proor Patch 4832 Food Processing Pumps 4833 Food Processing Pumps 4834 Valves Catalog 4834 Valves Catalog 4835 Controllers Catalog 4836 Controllers Catalog 4837 Single Disc Mills 4839 Multiwall Paper Bags 4839 Heat Treating Furnaces 4840 "Aids to Selection of Corro- sion-Resistant Pipe Material" 4844 Wire Screens Equipment 4844 Wire Screens Equipment 4844 Wire Screens Equipment 4844 Wire Screens 4845 Fiberglas-Binforced Plastics 4846 Electronic Voltage Regulators 4847 Tube Clemers Catalog 4848 High Temperature Valves 4850a Atomizer 4851 Electric Welding Catalog 4852 Nuclear Properties Chart 4853 Heat Exchangers 4855 Piper "B" Crushing Rolls 4855 Filters 4856 Velding Electrodes 4857 Monorall Tractor 4858 Velding Electrodes 4859 Fire Alarm Reference Booklet 4864 Gas Welding Rods Catalog 4855 Fiberglas Gas 4865 Food Catalog Fumps 4866 Gas Welding Rods Catalog 4867 Concrete Floor Data 4868 Metallizing Wire 4871 Insulating Cement (66) 4872 Master Pallets Folder 4873 Rod Type Heating Units 4874 Press Formed Parts 4875 Wood Link & Rubber Mats

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APRIL 1948

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"That's Inte

No Matter How It's Hard to K

Scientists at University of said to have discovered in ture gold. Process invo-iridium and platinum we neutrons with energies re-000,000 to 38,000,000 ele artificial gold begins to most immediately after ning off streams of electric

Whey Remover and Are Among Newes

A machine has recently which, using centrifugal is whey out of curds in mal other invention embodie for new tin cans. Cans p at a time, under a head over their tops while air plied. If there is a lea throws a switch and can rejected. (Natl. Patent Ind.)

New Method for Powder Color

New procedure is valual cases such as in comparison in the narrow range of "fi

Standards are made up o coated with a thin paste powder in a rapidly drvii of known composition. St coats the papers to a uni Standard paper strips are unknowns in a newly in chamber. (U. S. I. New dustrial Chemicals, Inc., (New York 17, N. Y.)

Largest Dry Ice Special 12" Insu

Twenty-five dry ice cars of type, with a capacity of have recently been added Mathieson Alkali Work-largest ever built for traice, are insulated with 1 new type insulation, and design and extra heavy of meet the demands of this

Sensitive Gas D

An electronic "chemist," de traces of one gas so mir represent only one part of another gas. (Electri Center, New York 17, N. Y.

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For more information uct at right, specify see information blank between pages 2

's Interesting"

ter How You Get It Hard to Keep It!

University of California are discovered how to manufac-Process involves bombarding platinum with a stream of h energies ranging from 18,-8,000,000 electron volts. The d begins to disintegrate alately after manufacture, givms of electrons and x-rays.

nover and Can Tester ng Newest Inventions

has recently been invented centrifugal force, whirls the curds in making cheese. An-ion embodies a leak tester cans. Cans pass rapidly, one ider a head that fits snugly ps while air pressure is apere is a leak, escaping air tch and can is automatically Vatl. Patent Council, Gary,

ethod for Cosmetic er Color Control

are is valuable in exacting in comparison of 20 shades range of "flesh."

made up of white papers, a thin paste composed of a rapidly drving nail lacquer position. Special apparatus ers to a uniform thickness. er strips are compared with a newly invented optical J. S. I. News — U. S. Innicals, Inc., 60 E. 42nd St., 7, N. Y.)

Dry Ice Cars Use al 12" Insulation

ry ice cars of the single-cell capacity of 45 tons each, been added to the fleet of llkali Works. The cars, built for transporting dry lated with 12 inches of a ulation, and are of special xtra heavy construction to nands of this type of serv-

ve Gas Detector

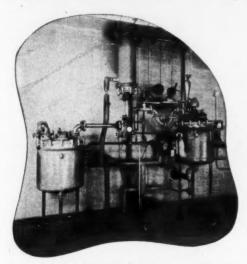
"chemist," developed for reso sensitive that it detects gas so minute that they one part of 100,000 parts as. (Electric Mfrs. Info. York 17, N. Y.)

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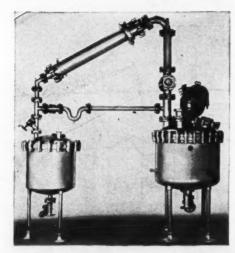
information on prodght, specify CP 4660 e information request ween pages 2-3.

How To Get LOW COST Processing Flexibility In Your Pilot Plant or Small-Scale Operations

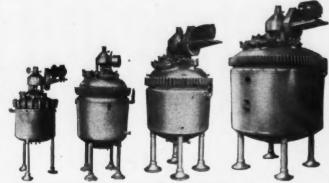
When your plans call for pilot or smallscale operations, you can save money on your equipment investment by utilizing standard Pfaudler glass-lined steel or stainless steel reaction equipment. Both types are available in a wide range of sizes with many alternatives with respect to heating jackets, top heads, agitators and drives. Check over the features below. Let us quote on your specific requirements.



Here is a typical glass-lined steel reaction assembly made up of standard Pfaudler units, including condenser and



A standard stainless steel assembly for simple distillation.



Above: Type "P" and "E" Glass-lined Steel Reactors are made in many sizes to give you maximum selectivity in meeting your problem.

GLASS-LINED STEEL-5 GALLONS UPWARD

Pfaudler Type "P" (pilot plant) Series of Reactors include open or closed, jacketed or unjacketed, glass-lined steel units of 5, 10, 20, 30, 50 and 100 gallons. Each may be equipped with anchor or impeller glass covered agitators, pulley or motor

Pfaudler Type "E" Series are available with the same alternatives and range from 50 to 750 gallons. Type "ES" are made as standard in 100 gallons capacity (50 and 100 gallons, special); Type "EM," 200 gallons as standard (150 gallons, special); Type "EL," 300 gallons as standard (200 gallons, special); Type "ELL," 500 and 750 gallons. Recent improvements in design have increased actual capacity substantially. Standard jacket pressures have been increased from 75 to 90 psi. Internal pressures are

rated at 25, 50 and 100 psi. in all sizes.

All Type "P" and "E" Reactors are lined with Pfaudler glass, resistant to all acids, except hydrofluoric, at elevated temperatures and pressures. This provides maximum processing flexibility. Should your process ever change, it does not involve scrapping the equipment. That may not hold true with metal equipment, an important point to consider when making your selection.

STAINLESS STEEL-5 TO 500 GALLONS

Pfaudler's series of standard Stainless Steel Reactors incorporates the same basic design and operating features as the glass-lined units. Liners are made of all welded stainless steel of types 302, 304, 316, 321 or 347 and in various finishes, with or without heat treatment. They are available with or without carbon steel jackets, welded stainless steel top-heads, stainless steel agitators and pulley or motor drives, etc.

COMPLETELY CATALOGED

Pfaudler Catalogs No. 817 (Glass-Lined Steel) and No. 823 (Stainless Steel) contain complete details from which you can make a selection. If copies are not available, please write and they will be sent. Make your selection of equipment from them. Then ask Pfaudler for a quotation!



PFAUDLER CO., ROCHESTER 4, NEW YORK

ENGINEERS AND FABRICATORS OF CORROSION RESISTANT PROCESS EQUIPMENT

Glace-lined Steel Stainland Stanto Miller 1

COULDN'T GET A

Even in a "sour crude" oil well

Maybe you think the oil business has little in common with your business ... but read on.

Recently a string of sucker-rods was pulled from a "sour" well after six months of continuous pumping. There was no sign of deterioration-no pitting due to galvanic corrosion, no scratching or marring of the coating, no focal point where corrosion could get a start.

These sucker-rods were coated with a tough, pliable, abrasionresistant, chemical-resistant film based on VINYLITE Brand Plastics!

Ask any oil man what he thinks of such a record. He will tell you it's a near-miracle.

Test rods coated with such a baked-on film have withstood one year's immersion in petroleum solvents of all types-and suffered no harm. This is important news to general industry as well as the petroleum fraternity! It means that metal-coatings based on VINYLITE resins can accomplish economies and set up performance records never thought possible-even in applications where the coating meets severe abuse and strong chemical attack!

Write Department DM-56 for the latest technical data on this new development in metal coatings. Your inquiry will receive the immediate personal attention of Bakelite engineers.

VINYLITE

RESINS

BAKELITE CORPORATION Unit of Union Carbide and Carbon Corporation Use 30 East 42nd Street, New York 17, N. Y.

START!...

Data courtesy of Watson-Standard Co.



CHEMICAL

The Magazine of Processing, Its Control and Development

APRIL, 1948 VOL. 11

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HIGHLIGHTS

These articles have been selected by the Editors as baving unusual interest

* Cellulose Filter Aid . . . Non-abrasive, inert to acids, alkalis and solvents . . . substantially ashless, permits burning for disposal or recovery of metallic particles 23

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The Cover Picture

Illustrated on the cover is a continuous vacuum process, that applies by evaporation, thin films of metal to paper, plastic sheets and textiles, at linear speeds of up to 500 feet per minute. See article on page 66.

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Temperature Control System Reduces Rejects for Plastic Molder

Electronic control maintains uniform temperatures in various zones of injection molding machine



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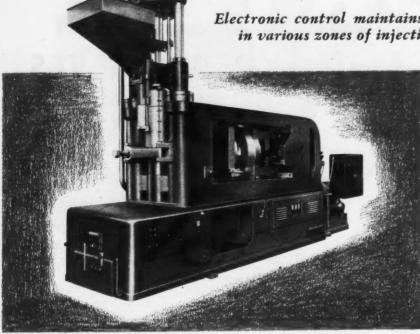
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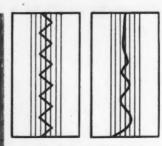
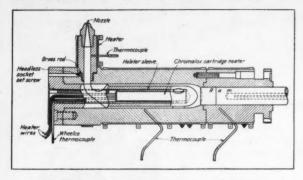


Chart shows proportioning of time-on to time-off to balanced input against load re-

Installation of Capacitrols on plastics injection molding machine



Cross-section view shows application of thermocouples to plastic injection molding machine

"shot." Molding powder in the cylinder is preheated in two stages and made plastic for injection by a heated "torpedo" and by heat applied externally to the nozzle. The ram forces the plasticized material through the port into the mold at the moment when the movable die is in contact with the stationary die. An automatic hyydraulic ejector removes the molded piece after the die is open, and the cycle is repeated.

Heating and plasticizing of the thermoplastic material is accomplished in the injection cylinder in three stages. Preheat is in two stages with approximately 100° F. temperature differential between them (this differential varies for different plastic materials). Preheat is applied by two resistance-type external bends, each with its own temperature control.

Plasticizing is accomplished by heating the material both externally and internally, by two resistance units. One is located on the outside of the cylinder at the injection end, and the other in the torpedo inside the chamber. The shape of the torpedo causes the plastics material to flow in an annular area, for better plasticizing control, Control circuit employed in the electronic instruments (one to each heating zone of the machine) incorporates a simply relay, capable of energizing and de-energizing electrical heating elements. Electronic circuit contains a vacuum tube, which acts as a generator of high-frequency oscillating current which flows through a pair of parallel coils. Coils are mounted on an adjustable pointer which is set to the desired temperature. Frequency of the oscillating current is changed when the metal flag, mounted on the indicating pointer of the pyrometer, is moved between the coils by a change in temperature as sensed by the thermocouple. This change in frequency operates a relay which controls the electric power input. Thermocouples are located in the preheat and plasticizing sections of the machine.

Preheat zones of this particular type of molding machine are controlled by direct indicating deflector type pyrometer controllers, utilizing a simple break-one, make-another circuit to achieve high-low or on-off control. Plasticizing section has a proportioning type pyrometer, in which is incorporated an electrical device that automatically proportions the time-on to time-off to balanced input against load requirements to provide closer control regulation. (Chart shows comparison)

RESULTS - After installation of the control equipment, the percentage of rejects was lowered considerably. Uniform products were produced. Lost time was reduced and production was increased. Easy means of changing temperature setting permitted quick changeover from one type of plastic to another.

SOURCE — Temperature control for this installation was designed by Wheelco Instruments Co., Dept. CP, 847 W. Harrison St., Chicago, Ill. . . . or for more information check CP 4663 on handy form, pages 2 and 3.

PROBLEM — In the injection molding of plastics, it was recognized by Lester-Phoenix, Inc., Cleveland, Ohio, that improper temperature control resulted in too many rejects, lost time and increased production costs.

Furthermore, the existing control equipment did not lend itself to easy changes in control setting to accommodate various types of plastics being molded.

SOLUTION - Electronic action pyrometers with proportional control were installed and used with zonal heating on the injection molding machine. Accompanying illustration shows the operation cycle and some elements of the control system employed for this application.

In operation, the thermoplastic, in powder form, feeds from the hopper into the injection cylinder, each cycle of the ram feeding an amount equal to the mass of the

Package 66% More Graphite with Valve Bag System

Container costs cut over 50%; sift-proof, dust-proof bags and automatic filling machines eliminate dirt problem

PROBLEM — The United States Graphite Co., Saginaw, Mich., originally used wooden barrels to pack foundry facings, mold wash, cordips, etc. Each of these products has its own peculiar packaging characteristics. Facings, mold washes and cordips are fluffy and light.

On the other hand metallurgical grades of graphite are in pro granular, heavy and free flowing. All grades of graphite, being black, entail a dirty packaging job unless the filling machines and containers are especially suited to the product.

In an effort to increase production in the packaging operation and cut costs, in addition to lessening the problem of dirt, open-mouth 100 lb. bags were substituted for barrels. Overall improvements were negligible and container costs, whether wooden barrels, steel drums or cloth bags, were still an important factor. A clean, fast-moving, accurate and economical packaging system was needed.

SOLUTION — A system using seven valve bag filling machines and 50 lb. multiwall valve bags was installed. Instead of the many slow operations involved in handling barrels or open mouth bags the whole procedure is reduced to a few simple steps.

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es of g job ecially Worker at each of the filling machines is able to keep the packaging job going with practically no interruption



Multiwall bags quickly filled with graphite when valve is attached to filling machine



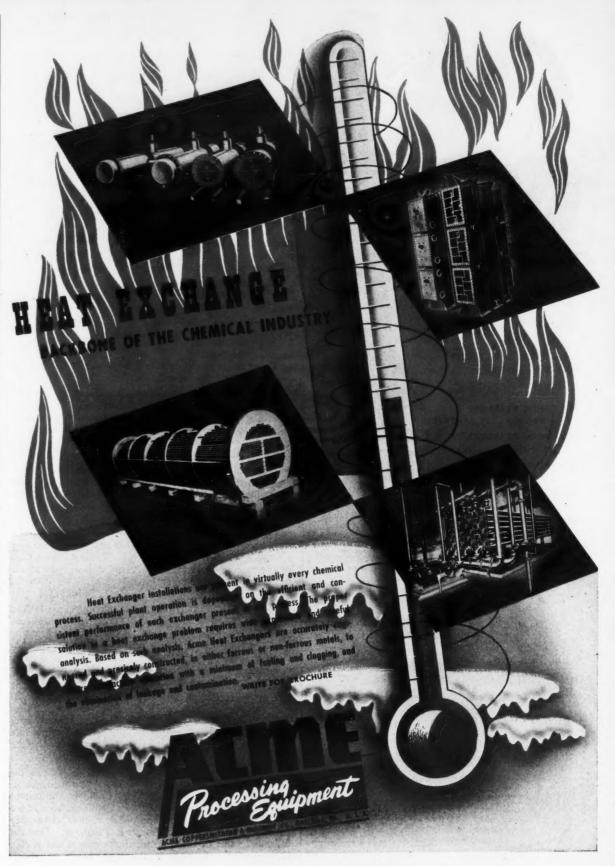
Easy handling, compact stacking and product protection are features of valve bags

and with a minimum of effort. A truck load of bags in compact piles is easy to move to any point where it may be required.

Bags are filled by attaching valve to the machine. The other end of the bag is placed in trough (see illustration). Weight is controlled to extreme accuracy. The tuck-in sleeve assures a tight sift-proof closure. Operations are carried on without the former problem of dirt. Filled bags are then picked up for transfer to storage or shipment. Filled bags are easy to handle and stack neatly and snugly.

RESULTS — Per-ton packaging cost cut while packaged output rose 66%. At the same time container costs were reduced from \$6.00 per ton for open-mouth cloth bags to \$3.28 for the multiwall valve bags, a drop of 45%. Bags are very easy to handle in storage and in processing operations.

SOURCE — St. Regis Sales Corp., Dept. CP, 320 Park Ave., New York 17, N. Y. . . . or for more information theck CP 4664 on handy form, pages 2 and 3.



When inquiring check CP 4665 on handy form, pgs. 2-3

view APRIL, 1948



You can identify each Type Chikson Ball-Bearing Swivel Joint by its distinctive color. Pressure Ratings are color-coded as follows:



MAXIMUM PRESSURE 1,000 psi BLUE

MAXIMUM PRESSURE 3,000 psi . . ALUMINUM

MAXIMUM PRESSURE 12,000 psi RED

MAXIMUM TEMPERATURE 500° F, 700 psi . YELLOW

WRITE FOR THE NEW CHIKSAN CATALOG which gives complete data.



1,000 psi-BLUE

MAY PRESSURE

300 psi-GREEN

MAX. TEMPERATURE-500° F-700 psi-YELLOW

3.000 psi-ALUMINUM

REPRESENTATIVES IN PRINCIPAL CITIES

WELL EQUIPMENT MFG. CORP.

HOUSTON 1, TEXAS MID-CONTINENT AREA

CHIKSAN EXPORT CO. BREA, CALIFORNIA - NEW YORK 7

EXCLUSIVE EXPORT REPRESENTATIVE



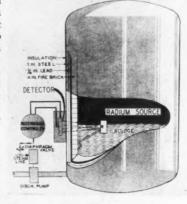
When inquiring check CP 4666 on handy form, pgs. 2-3

Instrument Employs Gamma Rays to Measure Liquid Level

Eliminates need for mechanical floats, electrical contacts, stuffing boxes and through connections

PROBLEM - In a large refinery a mechanical float was employed to throttle air to a diaphragm operated valve, controlling the level of sludge in a depropanizer, by varying the speed of the discharge pump.

Steam used for treatment caused a layer of foam on the surface of the sludge and created a false level indication. Sulphuric



Principle of operation of the Gagetron

acid used in treatment corroded the float arms, requiring replacement at frequent intervals.

SOLUTION- A Gagetron system was installed, with the radium source permanently mounted on a bracket inside the depropanizer, and the detector bolted to a manhole plate on the outside of the unit. Detector is connected electrically to a recording pneumatic controller which controls a diaphragm valve.

This system utilizes a Gamma Ray detector and the tremendous penetrating power of Gamma Rays emanating from a small radium source, to determine liquid level without any connections originating inside the containing vessel.

In use the instrument containing the Gamma Ray detector is placed on the exterior of the containing vessel; the Gamma Ray source, an iridium-platinum needle containing a minute quantity of a commercially available radium salt, is placed inside a highly corrosion-resistant float; this float remains on the liquid directly below the detector.

Since the Gamma Ray absorption factor of the vessel wall directly below the detector is a constant, and as the absorption factor of the gas, air, or the vapor above the liquid is negligible, the amount of detected gamma radiation is inversely proportional to the square of the distance between the source and the detector.

Gamma Rays, upon striking the detector (a counter of the Geiger-Mueller type), set up minute electrical pulses; the rate of generation of these electrical impulses is the indication of distance between the source and counter, and consequently the liquid level. These minute electrical pulses are greatly amplified, integrated, and rectified to produce a direct current, the value of which is proportional to the number of detected Gamma Rays per unit of time.

Since this direct current is inversely proportional to the square of the distance between the source and the detector, the measured level at the extremes would be difficult to read. To overcome this, a feed-back circuit has been added to produce a DC value that approaches a linear relationship to the distance between the source and detector. Thus the measured value of the resultant direct current can readily be converted into height of the liquid level.

Incorporated in the instrument is an AC power supply

which rectifies and supplies the DC voltages necessary for the electronic circuit. Unit is designed for operation on 90-110 volt, 50-60 cycle, AC power source. Power consumption is approximately 75 watts.

Useful for recording, indicating or controlling liquid levels in storage and process vessels, for all types of liquids. RESULTS - Accurate control of liquid level of the sludge is maintained. Breakdowns were eliminated.

SOURCE - This new liquid level control system is a development of Engineering Laboratories, Inc., Dept. CP, 610 E. Fourth St., Tulsa 3, Okla., . . . or for more information check CP 4667 on handy form, pages 2 and 3.

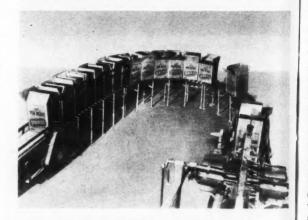
Conveyor Turns Corners to Squeeze Carton Sealing Line into Tight Spot

Flexible sections bend 180°; eliminate manual handling that use of straight section in limited space would have required

PROBLEM - Purex Corporation, South Gate, California, was proceeding with the production of a new detergent, - Trend - while awaiting completion of a new plant in which to manufacture it. Careful planning had permitted the entire production line to be successfully squeezed into the limited available space with but one serious difficulty. This was at the end of the line where the packaged product enters the carton sealer. Installation of a straight conveyor section at this point would necessitate the constant attention of two men to lift cartons from the conveyor onto the sealer.

SOLUTION — An Accordion conveyor was installed and its unusual flexibility permitted it to be bent into a "U-turn". The entire continuous production operation was maintained and cartons were carried directly to the final step of sealing the cartons.

The Purex production manager explains that "setting these sections up, two together with a power belt, then two more sections, we were able to utilize four loaders and keep cartons rolling in and out of sealing machine."



Conveyor turns corner to carry carton to sealer

The Accordion conveyor comes in a standard five section type with six adjustable legs. Length of a section is 100 inches open or extended and 35 inches closed. Side frames are spring steel, rollers are steel tubing. The standard width is 14 inches. Units of 10, 16, and 18 inch widths are available on order.

RESULTS - In this particular installation production

CHEMICAL PROCESSING Preview

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was continued at a high rate and enabled the company to maintain deliveries in accordance with commitments. In its general applications, the Accordion conveyor's flexibility permits it to move a variety of products where space limitations, rapidly changing requirements or other difficulties must be met.

SOURCE — Food Machinery Corp., Dept. CP, Riverside Cal. . . . or for more information check CP 4668 on handy form, pages 2 and 3.

Shakeout Unloads Coal From Hopper Cars in 90 Seconds

Rhythmic vibrations empty cars of coal, sand, ore, slag, without manual labor

PROBLEM — Midwestern steel company found that the unloading of coal cars involved excessive use of valuable manpower, that work was not being accomplished fast enough to keep cars moving at desired speed to avoid demurrage charges and make them quickly available to ease the urgent car shortage. Also, workers did not like the heavy labor involved and the resulting damage to shoes and clothing. One of the most serious matters was the damage to cars caused by hammers, poke bars, etc. Difficulties multiplied when coal was frozen.

SOLUTION — Portable car-shakeout was installed. This electric-powered materials handling machine unloads hopper-bottom cars in as little as 90 seconds.

It literally shakes free-flowing materials out of tightly packed cars. Operation is entirely mechanical with no manual labor required. At the most, only two men are needed. One opens and closes hopper doors, the other gives attention to car shake-out. With a 5-ton hoist, the machine is placed astraddle the sides of the car. Started and stopped by means of push-button switch.

When the shake-out is in operation, it sets up within itself rhythmic harmonics which are transmitted by contact to the car and its entire contents. Under repeated impulses, more than 1000 a minute of correct amplitude, the material empties rapidly from the car. In contrast to this is the estimated time of unloading a car of pulverized coal with a crew of twelve men using sledge hammers, — 40 minutes.

The fact that the shake-out unloads coal without damage to cars is especially important when it is pointed out that some mechanical unloaders do not avoid this.

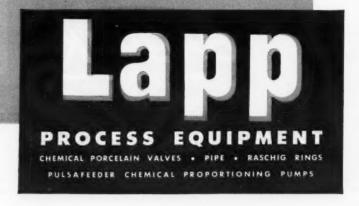
The illustration shows the shake-out in operation in another installation and demonstrates its versatility in handling many other materials in addition to coal, such as ore, limestone, sand and slag.

RESULTS — Carloads of coal, even that badly frozen, quickly unloaded. In fact, trainloads are handled so rapidly that it is not necessary to uncouple the locomotive. No manual labor is required. Unloading crews are reduced to minimum, freeing men for other work. Expense of heavy damage to worker's clothes and shoes is saved. Excessive demurrage charges are avoided, also charges for repairs to damaged cars. In the case of the steel plant cited here, the entire cost of the shake-out was absorbed by operational savings within a period of 105 days.

SOURCE — Portable car-shakeout is a product of Robins Conveyors Division (Hewitt-Robins, Inc.), Dept. CP, Passaic, N. J. . . . or for more information check CP 4669 on handy form, pages 2 and 3.



In Lapp Porcelain valves, hundreds of processors have found equipment which provides laboratory purity in industrial production. Now, with armor, the Lapp solid porcelain valve protects personnel and equipment against carelessness and accident. At a fraction of the cost of expensive alloy or lined valves, Lapp armored valves give the advantages of purity and corrosion resistance available only in porcelain. Armored Y valves are available in 1", 1½", 2", 3", 4" and 6" sizes; armored Angle valves in 1" and 2" sizes. Write for specifications. Lapp Insulator Co., Inc., Process Equipment Division, 356 Maple St., Le Roy, N. Y.



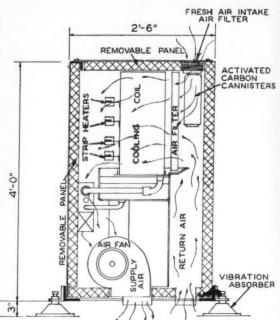
When inquiring check CP 4670 on handy form, pgs. 2-3



Air Conditioning Keeps Crane Cab Temperature at 80° or Lower

Activated carbon cannisters and filters remove dust and fumes from air

PROBLEM — As in all plants where hot metal must be handled, the crane operators of the Aliquippa Works, Jones & Laughlin Steel Corporation, must work in excessive temperatures and in atmospheres containing dust and noxious fumes. Air surrounding the cranes is 140 degrees. A practical, efficient means of air conditioning crane cabs was sought. The plant operators were familiar with various methods that had been tried in an effort to keep cabs at a reasonably comfortable



Drawing shows course of air through fan, filters, cooling coils and carbon cannisters

operator works, should be totally enclosed. At the Jones & Laughlin Aliquippa Works, roof and walls are insulated with three inches and floor with three and one-half inches of fibre glass. In addition, a steel heat shield is suspended six inches beneath the floor of the cab. The complete, self-contained cooling unit is seven feet long, two and one-half feet wide and four feet high. It is mounted directly on top of the cab, thus eliminating all duct work. The cooler circulates 400 cfm of air through the cab. Three fourths of this is recirculated, the balance is make-up air brought into the unit through two filters and activated carbon cannisters for removing fumes.

Air is thus filtered twice and is also used to ventilate the motors. An air diffuser is installed in the top of the cab and no duct is required. The diffuser gives a diffusing effect immediately around the operator and also moves the air along the inside surfaces of the cab to reduce the radiant effect generated by the abnormally high temperature outside.

Where working temperatures are no higher than 125



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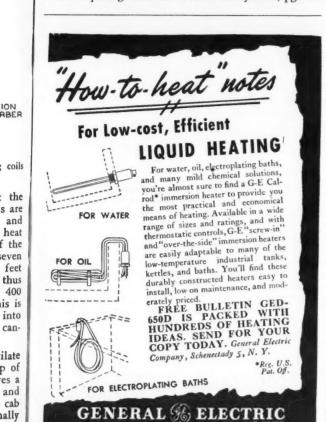
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When inquiring check CP 4672 on handy form, pgs. 2-3



When inquiring check CP 4673 on handy form, pgs. 2-3 APRIL, 1948

New Solutions OF PLANT PROBLEMS

working temperature. None of these systems involving such aids as fans, water tanks, dry ice, etc. had been satisfactory, nor had they embodied means to filter dust and fumes.

SOLUTION - To meet this specific problem, the Dravo Corporation, some time ago, developed a cab air-conditioning system using air as a condensing medium and requiring only electrical connections for operation. The need for water, water storage tanks and piping with attendant high maintenance costs and loss of time were eliminated. The first installation was made on a crane operating over lead vats, and fume removal equipment was incorporated. Performance of this intitial installation led to production of the Dravo self-contained standard crane cab air-conditioning unit for general industrial use.

The first such unit to be installed at the Aliquippa Works was on a 185 ton ladle crane. Although air surrounding the crane is 140 degrees, that within the cab is held automatically and continuously at 80 degrees. This plant has operated on a 24-hour-a-day schedule for many months in the period since installation. Performance of the coolers has been entirely satisfactory throughout these periods of prolonged service.

Installations have since been made for two other ladle cranes, three soaking pit cranes and a converter crane. These units are also equipped with heaters for warming the cabs in winter and with filters for removing dust and fumes.

Where extremely high temperatures exist in the working zone it has been found desirable to insulate the cab. In all installations, the cab, or that area in which the degrees, the crane need not be insulated, the cooling capacity alone being sufficient without this additional means of lowering temperatures.

The cab cooler unit uses Freon 114 as a refrigerant instead of Freon 12 because the former has a considerably higher boiling point, permitting a lower operating pressure under extreme conditions of high ambient temper-

The system also provides dust free air for the motors, reducing wear on brushes, etc.

Another typical installation is that at the Ford Motor Co. on a new full-vision 250 ton stripper and extractor

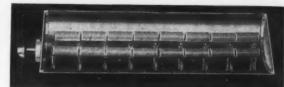
Besides ladle, converter, stripper and soaking pit cranes, many cranes in rolling and slab mills, and plants having blast and open hearth furnaces could well condition the air for the operators. This also applies to various chemical plants.

RESULTS - Cab atmospheres and temperatures kept at desirable rates at all times. Motors are also protected from dust. Maintenance cost of the air-conditioning system is negligible. Great satisfaction of employees and increased efficiency. Cab cooling units have functioned without breakdowns. Replacement of filters have been only maintenance.

SOURCE - Dravo Corp., Dept. CP, Neville Island, Pittsburgh 25, Pa., . . . or for more information check CP 4674 on the handy form, pages 2 and 3.

YOU MAY HAVE THE ANSWER

If your product has recently solved some troublesome problem, submit pertinent data to our editors. They will consider it carefully for early publication.



HIGH TEMPERATURE, RADIANT HEAT FOR PROCESSING

Doyle Infrared Heating and Drying Units provide, at small equipment cost, the high temperature, concentrated, radiant heat often required for surface drying, treating and conditioning coatings on paper, fibre and textiles. Especially effective with synthetic resins which react favorably under a high flash of heat, also in impregnating processes using latices or impregnating compounds.

Many industries use Doyle Units in continuous processing of sheet and roll materials, also as accessories to drying drums and ovens and for similar purposes.

Each Doyle Unit is a complete, standard assembly including scientifically-designed reflector and control switch. Manufactured in a wide range of sizes for convenient installation over conveyors or as an integral part of other processing equipment. For technical specifications and prices write to:

THE J. E. Doyle COMPANY

1222 WEST 6TH STREET . CLEVELAND 13, OHIO

When inquiring check CP 4675 on handy form, pgs. 2-3

HOW STRONG?

is a Welding Fitting





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Allowable Working Pressures: This book of pressure tables is a real working tool. Covers TuberTurn welding fittings in all sizes, all weights, and all regularly manufactured materials, for Power, Oil and Chemical Process, District Heating, Gas, Refrigeration, and Hydraulic Piping. Mail coupon.



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District Offices at New York, Philadelphia, Pittsburgh, Detroit, Chicago, Tulsa, Houston, San Francisco, Los Angeles T. M. Reg. U. S. Pat. Off.

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When inquiring check CP 4676 on handy form, pgs. 2-3

Page 11

Power Barrow Mounts Bucket or Platform, Dumps Mechanically, Carries Half Ton Material Handling

USES — For efficient, rapid and easy one man handling jobs involving materials or loads up to 18 cu. ft. and weighing up to 1000 lbs. Now in use in chemical processing, steel plants, foundries, etc.; in maintenance and construction; in handling coal, gravel. In loading, unloading and transferring materials and products within the plant.

FEATURES — With either bucket or platform installed, unit dumps automatically and returns to level locked position. The Prime-Mover turns in its own radius and passes through ordinary size doorways easily. Maneuvers in close quarters. Bucket and platform deck are quickly interchangeable without tools. Bucket capacity is 10 cu. ft. and, with sideboards and lighter materials, 18 cu. ft. Simple operation; throttle switch speed control. Climbs 20 per cent grades with full load.

DESCRIPTION — This three-wheeled unit with bucket installed weighs 400 pounds. It is 35" high; 63" long and 31½" wide. It has a three horsepower air-cooled engine and operates for eight hours on three gallons of fuel. Transmission, clutch and gears are completely enclosed and no belts or chains are used to transmit power from the engine.

Brake on rear wheel provides positive action in stopping and holding the Prime-Mover at a standstill. A master stop-lever at the operator's right hand furnishes simultaneous control of clutch and brake in one movement for almost instant stops. Fingertip engine control assures quick, easy acceleration.

For indoor-outdoor use; operates with finger tip controls; turns in own length; dual wheels and chains available



The two-cycle, three horsepower air-cooled engine has a large air cleaner and magneto equipped with impulse starter. Engine has kick starter. Heavy duty dual wheels and chains are available.

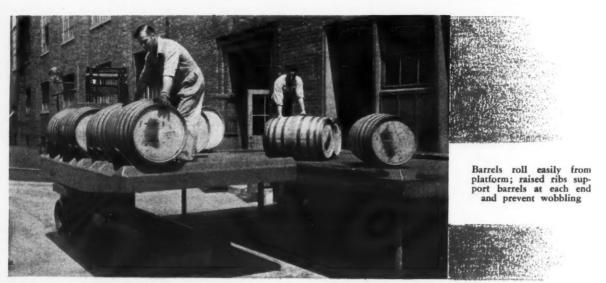
SOURCE — The Prime-Mover is a development of Bell Aircraft Co., Dept. CP, P. O. Box 1, Buffalo 5, N. Y. . . . or for more information check CP .4677 on the handy form, pages 2 and 3.

Grade of 20 per cent easily climbed by powered, mechanically-dumping barrow; finger-tip control governs speed which approximates fast walking pace

Bucket and platform are quickly interchangeable, latter being 30" x 44" and also dumping mechanically. Turning radius is 33"



Lift Truck Handles 12 Barrels at Once; No Skids or Pallets Required



Use at Hiram Walker & Sons, Inc. typical of service for which it is especially suited

USES — For use in transporting barrels from one location to another and in lifting loads from street levels to receiving platform levels. In the installation pictured here the truck is used by Hiram Walker and Sons, Inc., and is especially serviceable in handling the large number of barrels that must be moved in distillery operations of the wholesale liquor trade. It can be used to great advantage by other barrel users such as breweries, etc.

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FEATURES — This special truck can handle from three to five times as many barrels as can normally be handled by the more conventional type of lift or fork truck. Barrels are rolled directly from the truck platform without any manual lifting. Removable metal prongs inserted in platform prevent barrels rolling off in transit.

DESCRIPTION — Cab of truck has been covered with a canopy to protect the operator from weather, and lights are provided for night operation. Platform is heavy steel, welded construction, and raised ribs support the barrels at each end and prevent them from wobbling. A four-wheel forward outrigger supports and balances the long platform.

CHEMICAL PROCESSING Preview

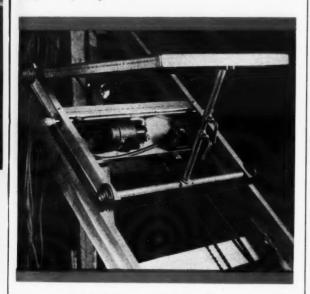
SOURCE — This special high-lift platform truck is a development of Yale & Towne Mfg. Co., Dept. CP, 4530 Tacony St., Philadelphia 24, Pa., . . . or for more information check CP 4678 on the handy form, pages

Freight Ladder Moves and Raises Loads in Stockrooms & Warehouses

Table is adjustable 45° - 90°; unit's capacity in portable service is 200 lbs.

JSES — For raising and lowering operations in loading, unloading and various material handling jobs. In portable use it will handle stock up to 200 pounds. Permanently installed, its carrying capacity is as high as 1000 pounds. For service in warehouses, stockrooms and in handling freight car and truck loads.

FEATURES — Adjustable to any angle from 45 degrees to 90 degrees. A ten foot ladder with gear-head motor weighs only 80 pounds.



Freight ladder has adjustable platform, aluminum channel side members

DESCRIPTION - The side members are aluminum channels, $3\frac{1}{2}$ inches high with $\frac{7}{8}$ inch flanges. The car frame is also made of aluminum. The motor, as may be seen in the photograph, is on a Z cross-member and two round cross members on which are also mounted the load carrying wheels. The drum switch is on the Z-member. The plastic knob on the end of the shuttle bar operates the switch control. As the freight ladder moves up the track, it can be stopped at any point by adjusting the movable stop.

A similar stop is provided for the lower positions, also. The drum switch serves as both a manual and limit switch control. Bottoms of the ladder are fitted with rubber treaded ladder shoes.

These ladders are also available in styles that operate by hand.

SOURCE — Product of Triangle Equipment Company, Inc., Dept. CP, 45 River Road, Nutley 10, N. J. . . . or for more information check CP 4679 on the handy form, pages 2 and 3.

I'LL SAVE YOU HALF... Moving, Lifting and Stacking Your Materials!



PLATFORM TRANSPORTER — Lifts and moves 2,000 4,000 and 6,000 pound loads with feather-touch of thumb on buttons. Pallet and platform models. With ATCO Electric Lift or DUAL-LIFT Foot Pump.



TRANSTACKER—Combines all features of Transporter, with a high-lift feature for stacking of 2,000 to 5,000 pound loads in seconds. Light in weight for limited floor and elevator capacities.



TRANSTRACTOR—will push or pull 6,000 pounds all day long . . . or up to 20,000 pounds intermittently, depending on type of load. Transporter power unit and finger-tip button control.

Yes...all you have to do is PRESS THE BUTTON . . . and presto, Automatic's TRANS-TRIPLETS you see pictured here, move, lift, tow .. see pictured here, move, lift, tow...
and even stack your material with
amazing touch-of-thumb ease. Tons
of raw material or finished product
are made FEATHER-LIGHT ... are
moved efficiently into, around, and
out of your plant with FEATHERTOUCH operation!

A miracle of scientific engineering puts Muscle Mike, the mighty midget in TRANS-TRIPLETS' electric power units, to work for you. Labor's foad is lightened, workers are released for more productive work, and manage-ment's load is lightened too.

For it is a matter of record, that Automatic's Transporters, Transtackers and Transtractors . . . alone, or in combination . . . have cut handling costs as much as 60% in all kinds of

Makes Tons **Feather-Light** with TRANS-TRIPLETS' **Feather-Touch** Operation One plant, with a single Transporter,

cut handling costs \$24,480.00 in one year. Workers gained a bonus of freedom from gruelling, back-breaking manual handling, production was ac-celerated, orders filled faster, customers got quicker service.

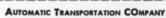
Investigate how you can put these industry-tested wonders of electric moving and lifting power to work for you. They pay for themselves in a surprisingly short time, give you permanent relief from the high overhead of manual material handling. Mail the course for complete forts. coupon for complete facts.





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signed to meet these specific problems, this new truck finds application wherever loads may be limited to 1000 lbs. Its low price makes it possible to use fork trucks and pallets on many applications for which the cost of equipment, in the past, was not justified. Total weight with load 3805 lbs.

For complete information get in touch with your nearest Baker representative or write us direct.

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of The Baker-Raulang Company
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Baker industrial trucks

When inquiring check CP 4681 on handy form, pgs. 2-3

Detroit
AIR HOISTS



They are recommended for paint, chemical, pickling processes; for potentially explosive and other hazardous conditions; also for a wide variety of normal applications.

Consult us on the uses and applications for Detroit, Geared Type, Pneumatic Hoists. Ask for Bulletin 700.

DETROIT HOIST & MACHINE CO.

When inquiring check CP 4682 on handy form, pgs. 2-3

Material Handling

Universal Belt Conveyor Booster Fed, Discharged from Either End

Length 20 ft.; belt speed is 60 fpm



Booster's vertical center adjustment is 24"

USES — As portable belt conveyor booster. Can be fed or discharged from either end. Easy portability and rapid adjustment quickly adapt it to wide range of service.

FEATURES - Hydraulic power makes it easy to adjust.

DESCRIPTION — Width of unit inset is 16½ and 26½ inches. Three ply rubber "Ruff Top" belt. Length 20 feet. Vertical adjustment at center 24". Minimum discharge elevation 10 feet 6 inches at 28 degrees. Driving unit is ¾ HP electric motor. Operates on 6 inch swivel ball bearing casters. Has two floor locks. Push button off and on switch.

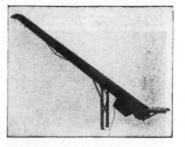
SOURCE — This new unit, the Styl-O-Veyor, is made by the Island Equipment Corp., 101 Park Ave., New York, N. Y. . . . or for more information check CP 4683 on handy form, pages 2 and 3.

Conveyor Designed for Between-Floor or Horizontal Movement

Operates efficiently at a 25 degree pitch for movement of boxes and cartons, slightly higher for bags

USES — Designed primarily as a conveyor for moving medium loads between floors or horizontally.

FEATURES—Built in lengths which are multiples of $2\frac{1}{2}$ feet up to 30 feet, the new unit may be remodeled to meet a



Multi-purpose power belt conveyor

changing need at any time by addition or removal of standardized sections of conveyor bed and lengthening or shortening of the belt.

Frame of the unit is light in weight, yet unusually strong because of the design of the cross-section.

DESCRIPTION — Conveyor is formed with provisions

for attaching legs, ceiling supports, and accessories such as guard rails or sorting tables when used horizontally. Units over 11 feet in length are built in two sections, and units over 21 feet are built in three sections. Trussing is supplied with all units over 16 feet to provide additional strength at the joints.

Equipped with boot type supports which provide height adjustment of both drive and take-up pulley ends of the conveyor. May be operated with motor at either end of the frame, in the elevated or horizontal positions.

Self-supporting feeder sections, adjustable through a 70 degree arc, permit the conveyor to be coupled to wheel and gravity conveyors to provide smooth flow of materials either on or off the belt. When not equipped with feeder sections, conveyor may be coupled to 12 or 18 inch wheel or roller conveyor by an adjustable crossbar arrangement at both ends. Feeder sections and safety cross bars are located against the belt with close clearance to prevent hazard between the belt and adjoining rollers.

A 1/3 or 3/4 H. P. motor, mounted in a formed steel protective box, provides the power to drive the 3 ply, 28 oz. canvas duck, rubber covered "Ruff-Top" belt at a speed of 65 or 94 feet per minute respectively.

Flared channel guard rail, designed to minimize friction of moving packages, is standard equipment. To facilitate frictionless movement of the belt, the 10 inch belt width model is equipped with a 4 lane wheel bed, and the 16 inch belt model with 5 lane wheel bed. All wheels are life-time grease packed.

Weight of the unit varies according to its length, width and accessories. Smallest unit, 11 feet long, weighs 469 pounds, and the longest unit, 31 feet overall, weighs 1110 pounds.

When equipped with a 3/4 H. P. right angle gearhead motor, the 11 foot unit at a 25 degree pitch will move a distributed load of 525 pounds at 77.2 tons per hour; the same unit with a 1/3 H. P. gearhead motor will move a 155 pound distributed load at 27.5 tons per hour.

SOURCE — Floor-Veyor, Jr., is a development of The Rapids-Standard Company, Inc., Dept. CP, Dept. FJ-88, 342 Peoples National Bank Building, Grand Rapids 2, Mich. . . . or for more information check CP 4684 on handy form, pages 2 and 3.

Carrier Adjusts to Various Drum Sizes; Quickly Attached, Detached

One operator safely, easily transports, positions drums for handling

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USES — Permits handling and positioning up to four drums at one time, picking them up and releasing them.

FEATURES — Drums are held in place with maximum security. The operation cannot possibly dent the lightest gauge drum.

DESCRIPTION — The "drum carrier" itself is constructed of high-tensile steel. Gross weight per unit is approximately 600 lbs. Due to its special construction, a carriage side shifter allows a movement 5 inches either side of the center. Therefore, time-wasting "spotting" by the operator is eliminated. Despite this allowance, the drums are held in place with maximum security by self-centering shoe pressure. As an integral part of its de-

CHEMICAL PROCESSING Preview

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Carrier fits any fork-type power truck

sign the carrier allows for diameter variations of two inches and height variations of eight inches. No special tools are necessary to change from fork to drum carrier on any fork truck.

Hydraulic lines are connected with Hansen two-way shut off couplings.

The carrier is designed to assure operator full vision at all times. Soft rubber shoes grip each drum firmly and gently. There is no possibility of slipping in snow, rain or ice. Change over is no problem. The Hansen quick-detachable hydraulic valve makes it possible for the carrier to be attached and detached in 10 minutes, releasing the fork truck for any other required service.

OURCE - Pallet Engineering Co., Dept. CP, 725 2nd St., San Francisco, Cal. . . . or for more information check CP 4685 on handy form, pages 2 and 3.

Pallet Box Only 7 1/2 In. Deep When Collapsed; Saves Space

Placed on either heavy or light pallet, capacities range from 2,000 to 5,000 lbs.

USES - Provides for efficient, rapid and safe handling of a wide range of loose materials.

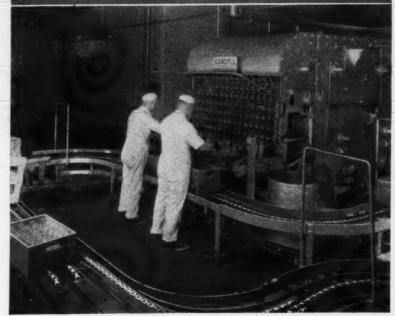
FEATURES - When not in use or when being returned empty, the wire sides fold down completely, forming a unit only 71/2 inches in depth to effect unusual savings in shipping and storage space.

DESCRIPTION — The pallet box is available with either the heavier pallet—96 lbs., or with the light model-69 lbs. Empty, the pallet box on the heavier pallet weighs 169 lbs.; on the light base, 142 lbs.

The pallet is made of high tensile steel in corrugated, crimped design that eliminates welding, and sturdy steel wire sides give this complete unit strength for loads ranging from 2,500 to 5,000 lbs. In tiered loads for which stakes are available 15,000 to 35,000 lbs. can be handled. The pallet box will hold nearly 27 cu. ft. of material.

SOURCE - Monroe Auto Equipment Co., Dept. CP, Monroe, Mich., . . . or for more information check CP 4686 on handy form, pages 2 and 3.

KEEP PRODUCTION "On the Move!" wITH LINK-BELT Chain Conveyors



There's a type of Link-Belt Chain to meet every conveyor need, each developed through years of close contact with industry. From heavy-duty chain conveyors in steel mills to the small strands carrying plated table ware, and whether the travel is on one plane or more, Link-Belt conveyor specialists can supply and aid you in utilizing the correct type for your needs.

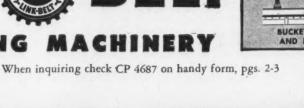
Chain conveyors conserve space, time and labor, and cut operating costs. They synchronize separate operations, regulate flow of products, pieces and packages, and supply the correct handling method for every item carried.

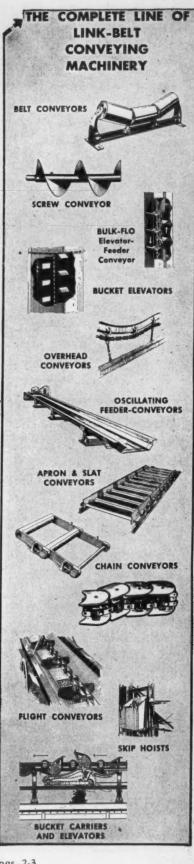
Get in touch with Link-Belt, leading producer of chain for every industrial purpose, for aid and advice in effective application of chain conveyors.

LINK-BELT COMPANY

Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Dallas 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8. Offices, Factory Branch Stores and Distributors in Principal Cities.









PRODUCTION INCREASE

By furnishing definite overhead routes for the movement of bar stock, congestion was eliminated. Free flow of materials to production machines nearly doubled their output.

HANDLING COST

Transfer of sheet metal from truck to storage is costly when handled sheet by sheet. A simple system such as this actually saved \$150 in handling cost within four months.

TIME SAVED

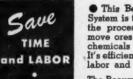
Passage of metal furnace parts through infra-red dryers cuts 70% from the time formerly required for drying. This opera-tion on monorail also elimin-ates costly handling labor.



Bulletin C-1

13100 ATHENS AVENUE

When inquiring check CP 4688 on handy form, pgs. 2-3



LOWER YOUR COSTS . . .

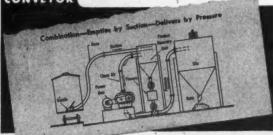
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BEAUMONT PNEUMATIC CONVEYOR

 This Beaumont Pneumatic Conveyor System is tailored to the requirements of the process industies. With it, you can move ores and fine, crushed or granular chemicals anywhere a pipe can be run. It's efficient in operation—saves time and labor and reduces handling costs.

The Beaumont Conveyor can be supplied to utilize suction or pressure or a combi-nation of both, as illustrated. Sizes are available for capacities from 1 to 100 tons per hour.

Since the job and material to be conveyed determine the general design of the system—your best bet is to acquaint us with your particular problem and let us quote on the most efficient type and size to serve your needs.





When inquiring check CP 4689 on handy form, pgs. 2-3

Hydraulic Lift Raises Conveyor from Level to 37° Incline

Unit equipped with large hopper; rubber ply canvas belt with 1 in. cleats



Belt conveyor made in 14 & 20 ft. units

USES - Handles all bulk materials such as chemicals, sand, gravel, coal; also machined parts, castings, etc.

FEATURES -Hydraulic lift raises conveyor section from ievel to an incline of 37 degrees. 6 x 16 in. tires are available if desired.

DESCRIPTION - The Sermat conveyor is of-

fered in 14 ft. and 20 ft. models. Gas or electric motor optional. Belt is tough rubber ply canvas construction. Equipped with 4.00 x 8 pneumatic tires and automobile springs and trailer type hitch.

SOURCE - Sermat Conveyor Corp., Dept. CP, 2350 West 58th St., Chicago, Ill. . . . or for more informa-tion check CP 4690 on handy form, pages 2 and 3.

Unload Hopper-Cars at Rate of 3 Tons a Minute

Stock-piler loader then moves material to trucks or storage

USES - For unloading hopper-cars handling variety of materials such as stone, rock, sand, gravel and other bulk loads. A stockpiler unloader is particularly suitable for use with the unloader.



Stockpiler-loader & hopper-car unloader in service

FEATURES — Capacity of 3 tons per minute. Operates in pits or above rails. Designed for truly heavy-duty service in handling wide variety of materials. Provides non-slip conveying.

DESCRIPTION - Important among the advantages of this unloader is the chain and belt conveyor. Chain and belt are riveted together by means of steel attachments and cleats. Power is transmitted through chain and belt to give positive belt movement at all times without plugging.

Drive is through V-belt, through a precision-built, oil tight speed reducer. There is a roller chain take-off for final drive to the head shaft. The unloader is equipped with a towing hitch and has pneumatic tires

ACID DRUMS ... are designed for EXTRA TRIPS

Look Hackney Acid Drums over. No longitudinal

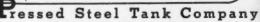
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or chime seams-only one circumferential butt weld located between and protected by two I-bar rolling hoops. Special heavy forged spuds, attached by a two pass weld, minimize bung failures. Reinforced chime protectors add extra strength and durability. Interior is smooth, free of cracks and crevices. Resistance to corrosion is increased by special heat-treating after fabrication.

Longer Life **Greater Strength** Uniformity **Easy Cleaning**

They're the most economical containers in the long run! Write for full details.



Manufacturers of Hackney Products

Main Office and Plant: 1463 South 66th Street, Milwaukee 14 1387 Vanderbilt Concourse Building, New York 1. 235 Hanno Building, Cleveland 15 568 Rossevelt Bidg., Los Angeles 14

When inquiring check CP 4691 on handy form, pgs. 2-3



Protect sensitive food products with Inconel* pails.

They stay bright and sanitary. They stay smooth and sturdy. They're easy to clean, easy to keep clean.

For Inconel was originally developed to resist tarnishing and corrosion by foods - particularly dairy products. It handles not only brines; milk, fruit juices and vegetable acids, but stronger acids, alkalies and organic chemicals as well.

Because Inconel pails are constructed of strong, tough, solid metal, they needn't be pampered. They have no coating to chip off, crack or wear away.

All-welded Inconel pails are made by the ALLCRAFT MANU-FACTURING COMPANY, Inc. in 12-, 14-, 16- and 20-quart sizes.

Available coast-to-coast.

Write us for name of nearest distributor.

THE INTERNATIONAL NICKEL COMPANY, INC. 67 Wall Street, New York 5, N.Y.



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INCONEL... PROTECTS PRODUCT PURITY

When inquiring check CP 4692 on handy form, pgs. 2-3

and shock-absorbers for highway towing. Anti-friction bearings are used throughout.

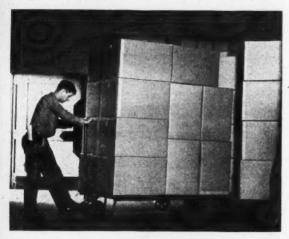
The unloader is very well balanced, making it easy to lift it at the tail end and spot it over rails or pits.

SOURCE — This hopper-car unloader and stockpiler-loader combination is a recent development of Barber-Greene Co., Dept. CP, Aurora, Ill. . . . or for more information check CP 4693 on handy form, pages 2 and 3.

Lift Jack & Live Skids, Operated by 1 Man, Keep Materials Moving

Loaded platforms easily moved and spotted; engaging pin locks automatically; freed by foot trip

USES — Low cost handling of raw materials, parts, supplies, finished and carton or cased products that are on the move to and from processing operations or to storage or shipment.



Live skids maneuvered easily with jack lift

FEATURES — The lift jack requires only 76 pounds of handle pressure to raise a 3000 lb. distributed load on a 60 in. platform. Jack itself weighs only 42 lbs.

DESCRIPTION — The L-156 lift jack embodies a socket that engages platform or skid lift pin. It is available with either semi-steel or rubber tired wheels. It is equipped with quick release and slow release levers, the latter being optional. The jacks stand alone when left anywhere. Spring handle holder keeps handle upright. Jack is equipped with Zerk fittings.

The L-126 semi-live skid truck has a 3000 lb. capacity. Construction embodies no bolts, nuts or rivets. The strong, all-steel, light weight platform is completely electric-welded.

Weight 156 lbs. for 36" x 60"; standard sizes 24" x 32" to 42" x 72". (Available however in sizes to individual requirements).

Wood deck platform L-124 in standard sizes from 24" x 32" to 42" x 72". Hardwood deck bolted to angle frame. Weight of size 36" x 60", 144 lbs.

SOURCE — This jack lift—semi-live skid system is a development of the All-Steel Welded Truck Co., Dept. CP, Rockford, Ill. . . . or for more information check CP 4694 on handy form, pages 2 and 3.

Questions and Answers about ATAN LO-VEYORS

WHAT MATERIALS CAN BE HANDLED?



Dry aggregate materials ranging from granular up to 6" lumps such as sand, cereals, chemicals and many others.

IS DUST-TIGHT OPERATION AVAILABLE?



Flat conveyor pans with cover and booted inlets and outlets and also gastight tubular conveyors permit handling materials without contamination or explosion

HOW MUCH HEAD ROOM IS REQUIRED?



Average overall height is less than 18" except for a short distance where shaker is mounted.

HOW DO AJAX LO-VEYORS REDUCE COSTS?



They eliminate moving materials by costly nonproductive shovel and wheelbarrow methods.

ARE ABRASIVE CONDITIONS HARMFUL?



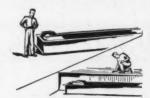
Unaffected by sand and abrasives, they are ideal for foundries, chemical plants, cement mills, etc.

HOW DOES AJAX REDUCE WEAR?



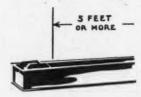
Reciprocating drive unit is completely enclosed. All eccentrics, idler pulleys and exposed bearings are eliminated.

CAN AJAX LO-VEYORS BE INSTALLED ANYWHERE?



They are self-contained units ready to set in place and use. Easily installed on or below floor or suspended from wall or ceiling.

CAN THEY BE USED FOR SHORT AND LONG CARRIES?



Lengths, widths and capacities to suit various materials, plant conditions and requirements of the process.

ARE AJAX LO-VEYORS ECONOMICAL?



They are economical to buy, operate and maintain.

Write telling us your material bandling needs and Ajax engineers will make recommendations.

AJAX FLEXIBLE COUPLING CO. INC. WESTFIELD, N.Y.

When inquiring check CP 4695 on handy form, pgs. 2-3

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When inquiring check CP 4696 on handy form, pgs. 2-3

HE YALE & TOWNE MANUFACTURING CO

4530 Tacony Street Philadelphia 24, Pa



ALSO TOTE PAN, BOX, CARBOY, KEG TRUCKS!

When inquiring check CP 4697 on handy form, pgs. 2-3

Material Handling

Trucks' Electric or Foot Lifts Need Less Power or Pressure

Required foot pressure cut 1/3; electric lift uses 10% battery capacity in 1 day

USES — These motorized lift trucks, available with either foot lift or electric lift, move skid or pallet loads of wide range of materials and products through production operations and in receiving, shipping and storage operations.

FEATURES — The automatic dual lift, the new foot pump, reduces by an average of one-third the foot pressure necessary to lift loads into moving position or maximum height, easing and accelerating the entire



Electric hand trucks with new foot and electric lift mechanisms

operation. It features an exclusive new hydraulic lift pump development which combines a low pressure (high speed) cylinder for raising the platform or forks into contact with skid or pallet in a high pressure (low speed) cylinder for raising the load.

The electric lift is so efficient that it can operate on the standard 11-plate battery of a motorized hand truck, eliminating the necessity of oversize batteries. Lifts and moves even with maximum loads and to maximum heights are accomplished in 5 seconds.

DESCRIPTION — In operating the foot pump, release of pressure on the pedal opens the valve and permits the high speed cylinder to idle while the high pressure cylinder is lifting the load, whereas formerly extra foot pressure, the heaviest stroke of the lift, was required to do this. The new foot pump can be installed on three earlier model trucks.

With the electric lift, less than 10% of the battery capacity is used in raising platform to full height throughout a normal day's work. Since the lift is seldom raised to full height in most of a day's operations the amount of current actually used is closer to 5%. Both the foot-lift and electric-lift types are made in four standard units, the 4000 and 6000 lb. platform models and the 3000 and 4000 lb. pallet models, and in various special models.

These trucks now have a new, enlarged bumper guard. The guard — ½ in. x 6 in. formed steel plate — is fitted over the former smaller bumper plate and is easily removable, if desired.

"Dead-man" control is incorporated in both foot-lift and electric-lift models. The double-position brake is applied by either lowering or raising the handle.

SOURCE — Automatic Transportation Co., Dept. CP, 149 West 87th St., Chicago 20, Ill. . . . or for more information check CP 4698 on handy form, pages 2 and 3.

NEW STEVEDORE, JR. POWER BELT CONVEYOR

ADDS HANDLING FLEXIBILITY



This portable unit of proved design has been re-vamped from end to end. Flexible adjustments. For instance, 11 ft. model permits 82" stacking height. Conveys on the level at heights of 18¾" to 64¾" from floor. New positive action screw and bevel gear sup-

ports make height adjustment easier, safer. Heavy-duty side channels; full length guard rails; 25% wider belts; moves from job to job on free-rolling casters. Details on request.

THE RAPIDS-STANDARD CO., INC.
350 Rapistan Bldg., Grand Rapids 2, Mich.
Representatives in principal cities

Rapids-Standard MATERIAL HANDLING EQUIPMENT



When inquiring check CP 4699 on handy form, pgs. 2-3

EASY does it...



with GENERAL IREBOUND:

31

EASY—one of America's best-known washing machine manufacturers has been cutting shipping and packing costs for years with General Wirebound Crates. They are easy to pack and unpack, they're lightweight and extra strong. Write today for your free copy of "The General Box."



API

ALL TYPES OF ENGINEERED SHIPPING CONTAINERS

GENERAL B

BOX COMPANY

★ ★ ★ ★ ★ 522 N. Dearbern St., Chicage 10, Ill.

DISTRICT OFFICES AND PLANTS: Brooklyn, Cincinnati, Detroit,
East St. Louis, Kansas City, Louisville, Milwaukee,
New Orleans, Sheboygan, Winchendon, Natches.
Continental Box Company, Inc.: Houston, Dallas.

When inquiring check CP 4700 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview



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When inquiring check CP 4701 on handy form, pgs. 2-3



WAHLERT PRODUCTS CORP. 3 DE KALB AVE., BROOKLYN 1, N. Y

When inquiring check FP 4702 on handy form, pgs. 2-3

Material Handling

Truck Moves Paper Rolls, Drums; Made in 800 & 1500 Lb. Models

Easily loaded highly mobile unit has finger tip release on non-slip arm

USES — Handles rolls of printing, wrapping paper, protective coatings as well as cylindrical objects such as drums, barrels and kegs.

FEATURES - Once arm is locked around roll or other object the load will not come off the truck. On reaching end of trip operator releases load with a finger tip catch. The truck is easy and safe to load. Truck is



Roll truck loads easily, safely; has non-slip arm

placed against load; arm is locked in place with finger tip control; truck is tilted back on wheels. Arm does not damage load.

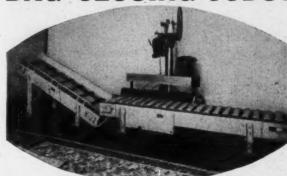
DESCRIPTION - Two models are available: Model RTL for light duty has a product diameter capacity up to 32 inches; material weight capacity up to 800 lbs. Model RTH for heavy duty has a product diameter capacity up to 40 inches; material weight capacity up to 1500 lbs. Special units are available in addition to standard models.

SOURCE - Ironbound Box & Lumber Co., Dept. CP, 102 Hoffman Pl., Hillside, N. J. . . . or for more information check CP 4703 on handy form, pages 2 and 3.

Tabulated Pocket Folder Gives Dimensions of Stainless Welding Fittings and Flanges

A tabulated, pocket-size folder presents dimensional data on welding fittings from 3/4 to 12", and light-weight American Standard flanges from 3/4 to 30", all in stainless types 304, 316 and 347 monel, inconel, nickel, copper and other industrial metals. Bulletin 476, issued by Taylor Forge & Pipe Works, Dept. CP, P. O. Box 485, Chicago 90, Ill. When inquiring specify CP 4704 on handy form, pages 2 and 3.

Engineered FOR HEAVY DUTY **BAG CLOSING JOBS!**



CLASS 20500. Here is a complete, engineered unit that meets every requirement for many plants. Choice of controls, conveyors, and sewing heads. For information on this and other Union Special units, ask for Bulletin No. 200. Union Special pioneered the use of filled bag closing machines in industry by building equipment especially designed to do the job better . . . faster . . . more economically. TODAY Union Special is your best assurance against rising costs . . . tight production schedules . . . and plant interruptions. Take advantage of Union Special's long experience in solving filled bag closing problems. UNION SPECIAL MACHINE COMPANY, 442 N. Franklin St., Chicago 10, Illinois.



When inquiring check CP 4705 on handy form, pgs. 2-3

THREE POPULAR DOLLIES

sturdily constructed to give safe efficient service for many years







• Inexpensive handy units that perform a multitude of cost-saving manpower-conserving moving jobs. These dollies — embodying typical Ironbound quality — are available in standard sizes for prompt shipment. Catalog GP-7 further describes and lists standard sizes.

IRONBOUND

BOX & LUMBER COMPANY

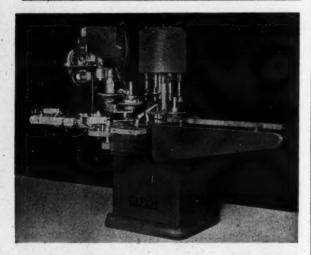
Materials Handling Division
HILLSIDE, N. J.



Ironbound

SEMI-LIVE SKIDS SKIDS • DOLLIES FLOOR TRUCKS

When inquiring check FP 4706 on handy form, pgs. 2-3



CAPEM ... APPLIES ANY
SCREW-CAP AT 2,000 TO 10,000
AN HOUR ... DELIVERS A LEAKPROOF SEAL ... AT LOW COST

Available in 1, 2, 4, 6 and 8 spindle models
Write for prices

CONSOLIDATED PALKAGING MACHINERY CORP.

When inquiring check CP 4707 on handy form, pgs. 2-3

Material Handling

Power Lift Truck is Handy Size, 27 1/2" from Handle to Box

4000 and 6000 pound capacities. Heights 7, 9, or 11 inches



"Go-Getter" power lift truck

USES — Self-contained, walk-along unit may be used in a wide variety of material handling operations.

FEATURES — Single package hydraulic lift unit permits all adjustments to be made from the outside. To simplify maintenance or repairs, hydraulic or power unit can be quickly and easily removed from the body. 27½ inches between control handle and back of battery box, making it one of the shortest trucks of its type available.

DESCRIPTION — Lengths 36, 48, 54, 60, 72 inches and over with 26½ inch width. Platform raises a full 4 inches. 6 inch height available under certain conditions. An under-clearance of 3½ inches avoids hanging on ramps or aprons.

Operates on a 6 cell 13 plate battery which gives normal 8 hour operation. Front wheels are 12 x 3½ inch dual wheels with demountable rubber tires. On the platform trucks the rear wheels have the same diameter as the lowered platform height. All wheels have molded rubber treads.

Includes differential drive, which with dual front wheels insures full traction on uneven surfaces; delayed action motor control; adjustable deadman controlled hydraulic braking and adjustable Timken bearings.

SOURCE — Made by Revolvator Company, Dept. CP, North Bergen, N. J. . . . or for more information check CP 4708 on handy form, pages 2 and 3.

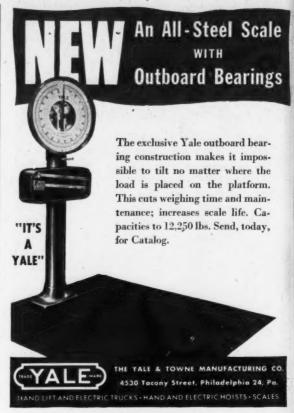
Glass Fabric Belting Conveys Hot Lime, Hot Molding Sand

Carries hot lime at 300 to 450° F. for 1 yr. before removal for inspection

USES — Glass fabric belting for conveying hot materials such as hot lime, hot molding sand, etc.

FEATURES — High resistance to loss of carcass strength for prolonged periods despite high temperatures and severe operating conditions.

In tests, one of these belts on a short conveyor for carrying hot molding sand from below a foundry shakeout machine was on 888 hours before test was termi-



When inquiring check CP 4709 on handy form, pgs. 2-3



MARKS
CONTAINERS
IN MOTION
AUTOMATICALLY



Cut packaging payroll costs! Use ROLACODER to mark code-dates, lot numbers, colors, flavors, etc. on containers as part of your present sealing or conveying operation. Makes clean, sure imprints containing up to 5 lines of copy on BAGS—BOXES—CARTONS—CASES—CANS—PAPER CONTAINERS—DRUMS—SHEET ROLLS. Friction-operated, self-inking. Uses quickly interested beautiful to the containing the self-inking.

Friction-operated, self-inking. Uses quickly interchangeable rubber type in patented base that permits combining different sizes and styles of types. Available with or without mark-centering mechanism.

Used by leading companies throughout the

Used by leading companies throughout the world!
Write for Data Sheet No. 6.0, describing ROLA-

Write for Data Sheet No. 6.0, describing ROLA CODER models.



195 Duene St., New York 13, N. Y.
SEE OUR CATALOG IN SWEET'S FILE FOR PROCESS INDUSTRIES

When inquiring check CP 4710 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

AP



The Greatest Achievement in Bulk Material Conveying!

BOTH THE SCREW AND THE TUBE

Screw at its regular rapid speed. Tube slowly about twice a minute, Nothing can remain within the system to become rancid. Absolutely self-cleaning. Handles any free-flowing bulk material, enciselessly and efficiently.

Feed and discharge spouts arranged to suit any layout. A companion unit to our popular Screw-Lift so widely used by processors.

Write for Form No. M-700-2 to outline your problem

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s. 2-3

Screw Conveyor Corporation
699 HOFFMAN ST. MANDIA HAMMOND, IND.
MANDIAGORIAN ST. PRODUCTS ST. PROPERTY.

When inquiring check CP 4711 on handy form, pgs. 2-3



CHEMICAL COMPANIES SOLVE THEIR DRUM LABELING PROBLEMS WITH KUM-KLEEN LABELS

Many chemical companies are faced with the problem of finding a label that stays stuck to containers even when exposed to temperature changes and handling. Ordinary labels won't "take" it... will invariably pop or curl off. Self-Adhesive Kum-Kleens, because of their extraordinary characteristics, provide the solution.

extraordinary characteristics, provide the solution.

Kum-Kleens stick and stay stuck to all types of smooth surfaces, flat or rounded, including metal, fibre, glass, etc.

They are unaffected by heat, cold, humidity, handling What's more, Kum-Kleens are applied far faster, because they require no moistening And they peel off easily without harming the surface, a feature that makes them ideal for labeling "returnables."

IT WILL PAY YOU TO TRY THESE REMARKABLE LABELS.
WRITE FOR SAMPLES TODAY. ADDRESS DEPT. CP-4.



AVERY ADHESIVE LABEL CORP., MONROVIA, CALIF.; 41 Park Row, N. Y., J; 608 S. Dearborn St., Chicago S; 2930 W. Grand Bivd., Detroit 2, and all principal cities. In Canada, Enterprise Sales, Toronto.

When inquiring check CP 4712 on handy form, pgs. 2-3

Material Handling

nated and belt removed for inspection, manufacturer reports. Similarly, a glass fabric belt carrying hot lime ranging from 300 to 450° F. remained in service 1 year before removal for inspection.

DESCRIPTION — Manufacturer suggests 2 weights: a 4-ply for light service, and a 5-ply for wider, longer belts where working stresses are somewhat higher than in light service. Recommended covers are either 5/32" top and 1/32" back, or 3/16" top and 1/32" back, depending on operating conditions.

Belt's top cover includes a ply of longitudinal nylon breaker, floated 1/32" above carcass for best protection. Tensile strength of each glass fabric ply is approximately equal to standard 32 oz. cotton fabric used in conventional belting, manufacturer reports.

SOURCE — A development of The B. F. Goodrich Company, Dept. CP, Akron, O. . . . or for more information check CP 4713 on handy form, pages 2 and 3.

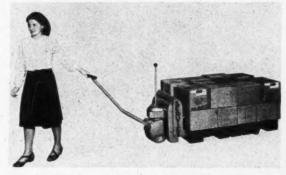
Pallet Trucks Suitable for Short Hauls and Spotting Loads

Toggle booster rollers float truck frame over bottom face of empty pallet so gently it is not displaced

USES — Used in connection with power-operated fork lift trucks, these pallet trucks are ideal for in-between operations, short hauls and for spotting loads. Provide complete utilization of floor area where congested conditions prevent the use of power-operated equipment.

FEATURES — Includes a set of "toggle booster" rollers that float the truck frame over the bottom face of the pallet so gently that an empty pallet is not displaced from its position by inserting the truck.

Short stroke vertical pump handle enables the operator



Leverlift lift truck for double faced pallet handling

to easily elevate the load under the most congested conditions. A hand operated release valve permits fast or slow lowering speed at the will of the operator.

DESCRIPTION — Unit is of pressed steel arc welded construction. All parts of its hydraulic lifting mechanism are quickly replaced. A built-in hydraulic safety valve prevents overloading.

Available only in 4000 pound capacity. Lowered height is 3½ inches and the lift is 4 inches; overall height 27 inches. Ten-inch diameter wheels. Fork lengths of 36, 42, 48, 54 and 60 inches are available.

SOURCE — Lift truck for double faced pallet handling is a development of Service Caster & Truck Corp., Dept. CP, Albion, Mich. . . . or for more information check CP 4714 on handy form, pages 2 and 3.



Don't take chances with product contamination. Use barrels and drums of Enduro—the lustrous metal that is inert to most chemical and food products—that is sanitary and easy to clean—that is resistant to corrosion—

that is tough and strong—that is economical to use because it lasts so long.



The STEVENS Line offers a type and size for every chemical and food plant need. Write us for literature.

The solid head drum at the left and the patented Ringlox drum shown above are but two of the many styles in the complete STEVENS Line.

NILES STEEL PRODUCTS DIVISION REPUBLIC STEEL CORPORATION DEPT. CP., NILES, OHIO



When inquiring check CP 4715 on handy form, pgs. 2-3.

APRIL, 1948

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Page 211

Plasticizer Gives More Plastic Stocks of Neoprene GN; Cuts Process Costs

Materials

Stable; does not require storage aging for maximum plasticity; shows possibilities in reclamation of cured scrap

USES — Suggested for the production of more plastic Neoprene stocks; production of a given plasticity in Neoprene GN in a shorter time; reclamation of cured scrap Neoprene GN stocks.

FEATURES — Reduces power, labor and plasticizer costs. Mills into Neoprene GN very readily, and laboratory tests indicate that it has a very desirable plasticizing effect. Stable, showing no change in plasticity up to 96 hours after milling. Tests also indicate that this plasticizer has no adverse effect on the aging qualities of cured Neoprene GN stocks.

DESCRIPTION — Plasticizer 42 is a complex derivative of a selected dialkyl dithiophosphoric acid. It is a soft, brown-colored, resin-like material with a specific gravity of approximately 1.10. Evidence shows that the same methods of plasticizing Neoprene GN may be used with Plasticizer 42 as with plasticizers of the dithiocarbamate or diaryl guanidine types.

Plasticizing equivalents:—Plasticizer 42 (1.5 parts) is approximately equivalent to 0.5 parts of hexamethylene ammonium hexamethylene dithiocarbamate. 1.1 part is equivalent to 1.5 parts of DOTG for immediate plasticizing effect. 1.0 parts is approximately equivalent to 0.3-0.4 parts of piperidinium pentamethylene dithiocarbamate. Plasticizer 42 is effective in ratios as low as 0.25% (based on the Neoprene) so that the ratios below 1.5% would appear to be sufficient for most purposes.

The following test run will illustrate the possible uses of this new plasticizer: 6" x 6" laboratory mill; initial mill temperature — 50°C (Water-steam shut off). Size of batch—400 gm. of Neoprene GN.

The Neoprene was milled for ½ minute with a fairly tight mill, then the mill was opened to give a ½ to ¾ inch bank and the milling continued for ½ minute before adding the plasticizer. After the plasticizer was added, the milling was continued for nine minutes, at which time the cold water was turned on and the Neoprene removed from the mill. At the end of four minutes the cold water was shut-off. After the Neoprene had been removed from the mill it was up-ended and put through the mill three times and then milled for one more minute before up-ending in the final removal in roll form for plasticity measurements. After cooling for two hours at room temperature, plasticity tests were run in the Williams Plastometer at 100°C.

When it is not desired to determine the plasticity before compounding, it appears that about 0.5% (based on the Neoprene) of stearic acid or some other suitable lubricant may be added at end of desired milling time, with the mixing of the other compounding ingredients carried out as usual.

The plasticity tests after milling with the plasticizer indicate that 1.5% of Plasticizer 42 gives essentially the

same plasticity as obtained with 0.5% of hexamethylene ammonium hexamethylene dithiocarbamate.

After compounding, the plasticity of the Plasticizer 42 stock in this particular run was slightly lower (higher "Y" value) than that of the hexamethylene ammonium hexamethylene dithiocarbamate stock. However, the set-up tests indicate that Plasticizer 42 does not cause any more scorching than the other commercial plasticizers used in the test runs. The tensile tests before and after aging indicate that Plasticizer 42 gives essentially the same physical properties and aging properties as the control or as obtained with hexamethylene ammonium hexamethylene dithiocarbamate. A preliminary comparison with piperidinium pentamethylene dithiocarbamate was made.

The data obtained with different samples and the setup tests indicate that Plasticizer 42 in equivalent ratio gives no more scorching than obtained with piperidinium pentamethylene dithiocarbamate.

Also, preliminary work indicates the possibility of reclaiming cured scrap Neoprene GN stocks by milling on a cold mill with 1 to 3% of Plasticizer 42 based on the weight of the scrap.

SOURCE — This Plasticizer is a development of the Calco Div. (American Cyanamid Co.), Dept. CP, Bound Brook, N. J., . . . or for more information check CP 4716 on handy form, pages 2 and 3.

Excels in Certain Applications Where Bromine is Substituted

Reaction is selective in that active bydrogen is replaced without effect on unsaturated linkage

USES — N-Bromosuccinimide is used as a brominating agent where it is desired to substitute bromine for an active hydrogen without adding bromine to an unsaturated linkage. Thus, the hydrogens of methyl or methylene groups next to double-bonds may be specifically substituted; the alpha hydrogens in the side-chains of aromatic or heterocyclic compounds may be substituted without substitution of the nucleus unless special activating factors are present.

Highly activated hydrogens such as the p-hydrogen of substituted anilines and phenolic ethers and esters, or the active hydrogens of phenanthrene, anthracene, thiophene, acenaphthene, coumarone and carbazole are substituted by bromine. Certain hydrogens which are activated by the carbonyl group may also be substituted.

FEATURES — May be stored for considerable periods without appreciable decomposition if protected from moisture and light.

Of particular interest are the brominations of the steroids, one of which has resulted in a new synthesis of vitamin D from cholesterol. General method of bromination consists of heating molecular proportions of N-Bromosuccinimide and the substance to be brominated in carbon tetrachloride. The succinimide produced by the reaction separates on the surface of the solution, from which it can be removed by filtration.

In some cases, catalysis by benzoyl peroxide or ultraviolet radiation is advantageous. Friedel-Crafts catalysts promote aromatic substitution.

DESCRIPTION — N-Bromosuccinimide may be safely handled in glass or glass-lined equipment; other materials of construction should be tested before use.

Molecular weight 178.0; active bromine 44.2% (indicates 98.4% pure); melting point 174-178° C. Color: white to pale buff. Faint bromine odor. Form: fine crystalline powder. Respirators are recommended for those handling the dry material.

SOURCE — This brominating agent is produced by Arapahoe Chemicals, Inc., Dept. CP, 2800 Pearl St., Boulder, Colo. . . . or for more information check CP 4717 on handy form, pages 2 and 3.

Non-Abrasive Cellulose Filter Aid Is Inert to Acids, Alkalis, Solvents

Easily suspended — 1.58 specific gravity — filter cakes are light in weight, easily handled; promote higher flow rates

USES — As a filter aid. In this application, being relatively insert it is seen that the tively inert, it is useful in filtering materials where contamination from silica must be avoided. Through its use, the iron content of strong caustic soda solutions is being reduced to about one-half that being obtained with other filter aids. It has been found to remove colloidal material so finely divided as to be unaffected by other agents. It may be used for complete removal of activated carbon, etc.

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APRIL, 1948-

It is used advantageously as a filter aid in connection with the following: aqueous systems containing oily impurities, drying oils, edible oils, fats, emulsified waxes, oils and resins, synthetic resinous materials containing haze-producing impurities, water and plating solutions containing activated carbon.

FEATURES - Being purified cellulose fibre, it is substantially ashless, permitting burning for disposal or recovery of metallic particles. It is likewise non-abrasive and inert to acids, alkalis and solvents. It is most easily suspended (specific gravity — 1.58) and its filter cakes are light in weight, non-flaking and easily handled.

DESCRIPTION - Solka-Floc is a finely divided cellulose produced from Solka. Alpha cellulose, which is the basic constituent of Solka-Floc chemically, possesses a natural electrostatic charge on each fibre in water at a pH above 2.2. This accentuates the otherwise normal mechanical action of the fibrous filter aid by absorbing positively charged colloidal particles which contain positively charged heavy metals, even though the colloidal size is small enough to pass through ordinary filter aids. Some of the advantages of this filter aid are that longer filtration cycles are possible, higher rates of flow are obtained, also highly clarified filtrates and increased capacities.

SOURCE - Solka-Floc is the product of Brown Co., Dept. CP, 500 5th Ave., New York, N. Y. . . . or for more information check CP 4718 on handy form, pages 2 and 3.

Vinyl Plastic-coated Fabrics

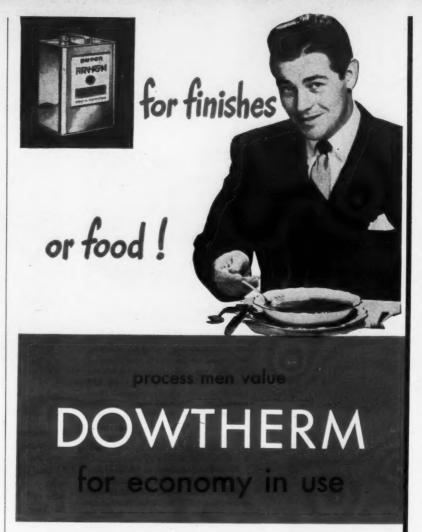
In sheets, rolls, tubing, troughs, etc.

USES — These vinyl plastic coated fabrics have been developed for industrial applications where the following qualities are of importance: flameproof, mildewproof, impervious to moisture and water, resistant to abrasive wear, creasing, flexing and puncturing; tensile strength.

FEATURES — Thoroughly impregnated and coated on both sides.

DESCRIPTION — One type of this industrial cloth has a jute base; another has a cotton duck base. Besides offering these materials in sheet form or rolls of various widths, the company is prepared to produce troughs, tubing, hydraulic piston covers, as well as boots and dust covers for applications requiring telescoping and

SOURCE - Made by American Brattice Cloth Corp., Dept. CP, Warsaw, Indiana., . . . or for more information check CP 4718-A on handy form, pages 2 and 3.



4 MORE BASIC DOWTHERM DIVIDENDS

CONTROLLED ACCURACY

Precise, uniform tempera-tures over a wide range. Pressure regulation holds tem-peratures constant. Maximum benefit in vapor stage.

Systems can be entirely auto-matic. Pressure adjustment makes single vaporizer do several different jobs at once.

1 EFFICIENCY

High coefficient of heat transfer speeds heating, minimizes equipment size and quantity of Dowtherm needed.

SAFETY

4 Permits separation of fire from flammable material. Low pressure at high temperature reduces operating hazards.

Process men in hundreds of widely diversified industries have proved by long use the economies offered by Dowtherm-the controlled heat transfer medium. Operating at low pressures with precise uniformity over a wide range of high temperatures, Dowtherm effects vital savings in time and materials. Uniform temperatures put an end to spoiled batches, costly shutdowns and replacements . . . increase quality and production. Dowtherm assures efficiency in heat processing operations with a minimum of maintenance and operating costs.

If your operations require precise, lowpressure heating in the 300°-725° F. range, write to Dow for complete information about Dowtherm.

THE DOW CHEMICAL COMPANY . MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Washington • Cleveland • Detroit • Chicago • St. Louis
Houston • San Francisce • Les Angeles • Seat.le
Dew Chemical of Canada, Limited, Toronto, Canada

CHEMICAL COMMENTS

PAINT IMPROVER

Methocel (Dow Methylcellulose) is proving useful in many ways in the paint industry and especially to manufacturers of water-base paints. It keeps pigments from flooding, settling or caking, provides thickening and binding action, and also serves as a pigment disperser. Its protective colloid action prolongs emulsion stability. In addition, its controlled viscosity prevents undue penetration and assures excellent brushing characteristics.

A HOUSEHOLD WORD IN INDUSTRY

Epsom Salt is one of those many-sided chemicals with an important place in a host of diversified industries. It is not only a fine medicinal chemical, but also a rugged standby for many factory jobs. To leather producers, it is a requisite in several stages of the tanning process . . . to textile men, it is important in rayon manufacture and as an aid in dveing textiles . . . to the paper industry, it is an essential ingredient in sizings. And it takes still other important roles in the ceramic and fertilizer industries.

SOLVING SOLVENT PROBLEMS

Conceded to be one of the best tar solvents known, Dow's o-Dichlorobenzene is coming into prominence as a highly useful cleaning agent for textiles. It is now being used for removing troublesome tar and tar-like substances from wool, and is particularly successful when used in combination with detergent mixtures. In addition to its tar-removing qualities, o-Dichlorobenzene is an effective solvent for waxes, and is an excellent paint remover.

Additional information about any of these products is available on request.



New Hycar Rubbers Easy Processing, Non-Staining

Feature better extrusion and mixing

USES — The first of these new Hycar rubbers is non-staining and non-discoloring, offering advantages in the fabrication of light colored products where freedom from staining and discoloration are primary factors. Both offer property of banding on process rolls very quickly and may be used in a variety of products.

FEATURES — Non-staining type utilizes a special anti-oxidant. Both types have superior extrusion characteristics due to less nerve and heat build-up. Excellent high temperature mixing in such applications as Banbury mixing. Better fusion and mold characteristics; increased building tack for laminated products, such as frictioned stocks and calendered sheeting.

DESCRIPTION — Designated as Hycar OR-25 NS (Non-staining) and OR-25 EP (Easy Processing). Both have superior processing characteristics over the regular Hycar 25. Preliminary investigations with these new Hycar rubbers indicate that to obtain an equivalent state of cure to the regular OR-25, the quantity of sulfur should be increased by .25 parts of sulfur to 100 parts of rubber polymer.

SOURCE — These products have been introduced by the B. F. Goodrich Chemical Co., Dept. CP, Rose Bldg., Cleveland 15, Ohio . . . or for more information check CP 4720 on handy form, pages 2 and 3.

Discusses Fluids, Lubricants from Polyalkylene Glycols

Properties and uses of several series of "Ucon" fluids and lubricants are revealed in a 20-page booklet. These are polyalkylene glycols and derivatives useful for general industrial lubrication, textile lubricants and conditioners, rubber lubrication, hydraulic applications.

Also for plasticizers and softeners, heat transfer media. Literature is illustrated with drawings and tabular data. Form 6500, issued by Carbide and Carbon Chemicals Corporation, Dept. CP, 30 E. 42nd St., New York, N. Y. When inquiring specify CP 4721 on handy form, pages 2 and 3.

FOR YOUR INFOR



FOOD and DRINK



Saccharin Monsanto

Saccharin, Monsanto's first product, is still the ideal sweetener for pharmaceuticals, beverages, tobacco products or consumer use. Since one pound of saccharin has the sweetening power of approximately 375 pounds of sugar, manufacturers can effect considerable savings by replacing all or part of their sugar needs with economical Saccharin Monsanto. Saccharin also saves valuable storage space, being concentrated in smill packages that take up only a fraction of the area required by other products.

For further information on the many uses and advantages of Saccharin Monsanto, send for a copy of the new folder, "Saccharin Monsanto... The Perfect Sweetener." Write to Monsanto Chemical Company, Organic Chemicals Division, 1704 South Second St., St. Louis 4, Missouri. Ask for it on the coupon if more convenient.

Preserving with Sodium Benzoate

A new folder on Monsanto Sodium Benzoate, U.S.P., contains many valuable suggestions for food processors who want to insure maximum storage and shef-keeping qualities in their fruit juices, jams, jellies, preserves, pickles, relishes, fountain syrups and margarine.

Monsanto Sodium Benzoate, U.S.P., imparts no objectionable taste, does not affect the nutrient value of foods and is completely harmless to human beings. The one preservative for food products permitted by Federal Law, Sodium Benzoate also has important applications in the industrial field. If you are interested in utilizing this product to the best advantage, write for a copy of "Preserving with Monsanto Sodium Benzoate." Use the coupon if you prefer.



No matter what plasticizer or resin you may now be using — whether for plastics or protective coatings — you will be interested in looking into the wide potentials of Santolite MHP.

This water-white Monsanto thermoplastic resin is highly compatible with a broad range of materials, including polyvinyl chloride and acetate and co-polymers; cellulose acetate and nitrate; and ethyl cellulose. Unlike most resins, Santolite MHP is also compatible with the polyamides. Other outstanding characteristics of this versatile Monsanto resin are its color and clarity. It increases gloss and, because of its high index of refraction, adds to the illusion of depth. Santolite MHP also assists in the incorporation of dyes — often providing more brilliant colors than are possible without it.

Santolite MHP is an efficient coupling agent, having the ability to make compatible some generally incompatible plasticizers. Used with phenolics, it acts successfully as a flow-aid. Santolite MHP has additional value in toughening up elastomeric materials such as polyvinyl chloride, polyvinyl butyral, ethyl cellulose and polyvinyl acetate.

Samples and detailed technical data are available to assist you in utilizing the many advantages of Santolite MHP. Write to MONSANTO CHEMICAL COMPANY, Plasticizers and Resins Department, 1704 South Second Street, St. Louis 4, Missouri, or simply return the coupon.

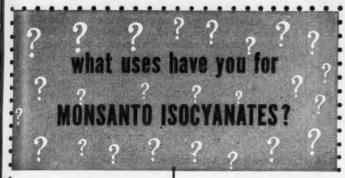
Santolite: Reg. U. S. Pat. Of.

OUTSTANDING COMPATIBILITY

Santolite MHP is compatible and useful with a wide range of materials, including these listed at right. Benzyl cellulese
Cellulese acetate
Cellulese acetate
butyrate
Cellulese nitrate
Cellulese propionate
Ethyl cellulese
Allyl Stärch
Chlorinated rubber

Polyvinyi acetate
Polyvinyi butyrai
Polyvinyi chloride
Polyvinyi co-polymera

Casein Polyamides Shellac



LATEST TECHNICAL DATA



Because the isocyanates offer many unusual new application possibilities, Monsanto has prepared a technical bulletin on these important compounds. A copy will be sent promptly on request. Material in the bulletin covers much important information on the isocyanates, including: suggested uses, availability, reactions, toxicity, analytical methods, storage.

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PILOT PLANT QUANTITIES AVAILABLE



Monsanto now has pilot plant quantities of phenyl isocyanate, octadecyl isocyanate and m-tolylene isocyanate available to manufacturers who wish to investigate the many potentialities of these compounds.

MANY COMMERCIAL USES

The principal uses for isocyanates lie in the field of high polymers. Among the applications with great promise for manufacturers are:

Improved plasticizers, varnishes, coatings and drying oils.

Hard, clear, insoluble resins.

Adhesives suitable for binding rubber to foreign materials such as metal or rayon.

Rubber-like products with tear, abrasion and oil resistance; non-slip properties; and imperviousness to gas. Excellent adhesives from natural or synthetic rubber and certain other elastomers,

Waterproofing compounds for fabrics.

Improved dyeing of cellulose textiles.

Superior polyurethanes for dentures, filaments and fibers, adhesives, foams.

Reduced time in dyeing operations.

Resinous formaldehyde products with better hardness and water resistance.

Production of electrical insulators, etoothbrush bristles and resinous films of many kinds.

WRITE FOR A COPY OF TECHNICAL BULLETIN No. P-125. Address Monsunto Chemical Company, Phosphate Division, 1704 South Second Street, St. Louis 4, Mo. Ask for it on the coupon if you prefer.

MONSANTO ETHYL ACETATE

Low Price, Fermentation Grade

Monsanto ethyl acetate is now available for prompt shipment in truck or car lots. Industrial users are invited to contact Monsanto Chemical Company, Merrimac Division, Boston 49, Mass., regarding their requirements.



New Production Facilities for Monsanto Adhesives

Plans are progressing for the Monsanto Western Division's installation of a new plant at Decatur, Illinois, a move that will bring to the Midwest a part of the company's Portsmouth, Virginia, glue and adhesives manufacturing operation. Plans have been drawn up by the B-W Construction Company, general contractors, of Chicago. H. P. Banks, vice-president of Monsanto and general manager of the Western Division, says operations at the new site will start some time after July 1, 1948.

MONSANTO CHEMICAL COMPANY, 1704 South Second St., St. Louis 4, Mo. District Sales Officess New York, Philadelphia, Chicago, Boston, Detroit, Cleveland, Cincinnati, Charlotte, Birmingham, Houston, Akron, Los Angeles, San Francisco, Seattle. In Canada: Monsanto (Canada) Limited, Montreal.



MONSANTO CHEMICAL COMPANY 1704 South Second Street, St. Louis 4, Missouri

Please send me further information on the following products:

Name_

Company.

Address

Materials

Soya Bean Oil, Styrene Basis of New Drier

Acts as pore-sealing oil with very little absorption even on fresh surfaces

USES — Used during the was to synthesize rubber. It is described as a valuable paint oil for all pigments.

FEATURES — Exceptional hardness, elasticity. Alkali and water proofness.

DESCRIPTION — This new oil, named Ultrol, is a condensation of Soya bean oil and styrene. It is to be offered in viscosities Z to Z6, ready to be reduced to any desired consistency. With a minimum amount of cobalt drier, the film will dry in less than three hours.

Ultrol will easily dissolve in high solvency mineral spirits; 80% mineral oil and 20% aromatics (as for instance Varsol No. 2). It is not compatible with other vegetable oils. However, it is compatible with certain resin and varnish mixtures.

SOURCE — Spencer Kellogg and Sons, Inc., (Research Laboratories), Dept. CP, Buffalo 5, N. Y. . . . or for more information check CP 4722 on handy form, pages 2 and 3.

Gives Factual Data on Super Refractories

Super refractories for exacting conditions are described in a 20-page booklet, with typical examples of their applications and performance. Physical properties are listed in each case.

Section 2 supplies information on checkers, pointing out 5 advantages useful in getting greater capacity from smaller regenerators in reforming organic gases. Charts illustrate each point. Section 3 describes an underdrain system using rapid sand filters. Title: "Brief Facts About Super Refractories."

Issued by The Carborundum Company, Refractories Div., Dept. CP, Perth Amboy, N. J. When inquiring specify CP 4723 on handy form, pages 2 and 3.

For more information on product at left, specify CP 4724 . . . see information request blank between pages 2-3.



This Spark Plug Body holds a lot of profitable ideas—

— Ideas for users and manufacturers of high-temperature refractory brick . . . electrical insulators . . . burner tips . . . grinding balls . . . heat transfer pebbles . . . combustion and thermocouple tubes . . . and linings for furnaces, kilns and towers.

—Ideas for those who need a material that holds dimensions accurately, yet resists extremely high thermal, mechanical and dielectric stresses.

Most spark plug bodies today are more than 90% ALCOA Tabular Alumina, because this material offers a unique combination of properties. It is a dense refractory in the form of corundum with:

Low water absorption: 1% to 4%

Low porosity: 3% to 13.5%

High fusion point: 2050 C. or 3722 F.

High properties in a sintered alumina body-

*Tensile Strength: Up to 36,000 lb./sq. inch *Compressive Strength: Up to 410,000 lb./

*Dielectric Strength: Up to 1100 volts/mil.

ALCOA Tabular Alumina is preshrunk. This means that it holds dimensions extremely well during firing—a property that often entirely eliminates the necessity of finish-grinding or machining.

ALCOA Tabular Alumina is available as coarse granules or fine powder. Let us tell you more about this interesting form of aluminum oxide. Write to Aluminum Company of America, Chemicals Division, 1465 Gulf Building, Pittsburgh 19, Pennsylvania.

* From "Westinghouse Engineer," May, 1946



ALCOA CHEMICALS

ACTIVATED ALUMINAS . CALCINED ALUMINAS . LOW SODA ALUMINAS . TABULAR ALUMINAS . HYDRATED ALUMIN ALUMINUM FLUORIDE . SODIUM FLUORIDE . SODIUM ACID FLUORIDE . FLUOBORIC ACID . CRYOLITE

When inquiring check CP 4725 on handy form, pgs. 2-3

Paint Forms Bond with Masonry to Waterproof Walls and Roofs

Applied above or below grade, inside or outdoors; penetrates by capillary action

USES — Designed to permanently waterproof roof slabs, walls and foundations of poured concrete; cinder and cinder block walls and foundations; cement and common brick, plaster stucco and all masonry surfaces. It may be used on interior or exterior surfaces, above or below grade.

FEATURES — The maker describes this paint as being designed to provide permanent waterproofing of masonry surfaces. Only one application is said to be required, in two coats at the most.

When the surface is wet down according to instructions prior to the application of the waterproofing paint, capillary action begins. The water is drawn into the masonry from the surface. Then, as the paint is applied, the water working its way into the voids carries with it the waterproofing element in the paint. This element is so fine that it will pass through a 500 mesh screen. When in the voids, it forms a bond with the masonry, and as the other ingredients of the paint set up a drying or dehydrating action to dispel the water, the waterproofing material, bonded to the masonry and a permanent part of it, remains, and the voids are filled. As the cure takes place, these elements dry and harden.

DESCRIPTION — Dri-N-Tite is a waterproofing in liquid form. In use it is not to be diluted and no additions should be made to it. If spray application is desired, special instructions as to methods and equipment should be observed.

Dri-N-Tite is applied to wet surfaces, never dry surfaces, by brush just as it comes from the container, after stirring to thoroughly mix it. It must not, however, be used at freezing temperatures.

Surfaces that have been treated are impervious to water and to many acids and alkaline solutions. Special treatment is necessary for surfaces exposed to acids and alkalies and to volatile gases exhausted by retorts and chimneys.

SOURCE — Arid-Crete Corp., Dept. CP, 4601 Vine St., Cincinnati, Ohio, . . . or for more information check CP 4726 on handy form, pages 2 and 3.

Hycar P.A. Resists Heat, Oils, Ozone; Has Good Flexing Life

Available in dry & latex forms; processed in soft to hard compositions; stands 400° F.

USES — In unvulcanized state it is expected to find many applications as an adhesive and as a coating or impregnant for fabrics and papers. Vulcanized products have shown fine performance as heat-resistant coatings on fabrics, heat and oil resistant gaskets, hose, belting, oil seals and other mechanical applications. As an insulation coating on electric motor coils, and a heat resistant oil jacket for wire.

FEATURES — Patents covering processes of vulcanization have been issued to the company and will be made available to licensees. These processes make possible the manufacture of rubber products that will withstand

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operating temperatures considerably above those of conventional rubbers. When tested under an electric iron of 400° F. for 8 hours, the new material showed no signs of loss in properties, whereas older type rubber compounds were completely deteriorated in a much shorter time. After 720 hours at 300 degrees F., the polyacrylic ester shows a change in elongation of only 35 per cent in comparison with 75 per cent in 7 hours for good rubber compounds. Ozone resistance is even more striking, 600 hours exposure showing less effect on the new material than 6 seconds exposure on rubber.

DESCRIPTION - Hycar P. A. is the name of this new type of rubber which is technically identified as a polyacrylic ester and is an elastomeric material resembling natural, pale crepe rubber in appearance. The vulcanized forms exhibit outstanding resistance to heat, oils, ultraviolet light, ozone and gas diffusion, and non-rigid compounds show extremely good flexing life.

SOURCE — Hycar P. A., now in semi-production, is made by B. F. Goodrich Chemical Co., Cleveland, Ohio , . or for more information check CP 4727 on handy form, pages 2 and 3.

Belt Coating Has Good Features of Synthetic Rubber, Vinyl Resin

Also has excellent adhesion to metal, concrete, wood

USES - For use on rubber, rubber belting and cotton belting. Recommended for conveyors and other belting subject to abrasion, spillage of water, grease, oil, chemical solutions and cleaning agents.

FEATURES - Combines the properties of synthetic rubber with the chemical resistance of Vinyl resins to produce a film of unusual toughness and flexibility with excellent water resistance.

DESCRIPTION - This coating-Americant Number 40 is made in two grades: - 40 and 40x. The second provides a very extensible film similar to soft rubber. Both are non-toxic and non-contaminating and can be used in chemical and other industries where contamination is a factor.

SOURCE - Developed by Americant Division, American Pipe & Construction Company, Dept. CP, Box 3428, Terminal Annex, Los Angeles, Calif., . . . or for more information check CP 4728 on handy form, pages 2 and 3.

Graphs, Tables and Charts Give Data Concerning Pigments in Rubber

Useful information concerning pigments in rubber is presented by means of graphs, tables and bar charts in a 32-page booklet. Properties of manufacturer's carbon blacks and inorganic pigments are tabulated as to particle shape and size distribution, nature of particle surface, crystallite or internal structure, etc.

Some of the subjects covered include comparisons of various blacks both in natural rubber and blends; white pigments in natural rubber; hard and soft clays in natural rubber; loadings, etc. Literature is in 2 colors, highly legible. Bulletin 47-1, issued by Witco Chemical Company, Dept. CP, 295 Madison Ave., New York 17, N. Y. When inquiring specify CP 4729 on handy form, pages 2 and 3.

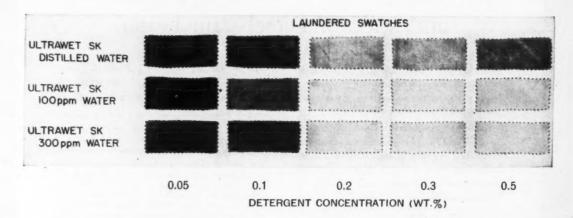


ULTRAWET K's

Is your detergent efficient in all kinds of water?

- · If not, it will pay to investigate Atlantic's new Ultrawet SK. The efficiency of this improved detergent actually increases as water becomes harder. As shown below, Ultrawet SK is even more effective in water with a hardness of 300 ppm than in distilled water. It eliminates the trouble and expense of water softening.
- · Ultrawet SK is one of the new K series of alkyl aryl surface-active agents. This family is the latest development of an organization that has been producing superior detergents and wetting agents for over 10 years. Ultrawet K's are backed by Atlantic's great research facilities. They are now available in quantity in the following types:

Physical form			ve Sulfonate — min		
Ultrawet K (flakes) .					85
Ultrawet 30K (liquid)					25.5
Ultrawet SK (beads) .					35



Picture shows wool detergency of Ultrawet SK. Wool swatches impregnated with a synthetic soil are washed in a standard launderometer. The wash solutions consist of stated concentrations of detergent and water of type indicated. Tests are conducted for 20 minutes at 105° F., and followed by 2 rinses.

For samples, further information and quotations, contact

THE ATLANTIC REFINING COMPANY CHEMICAL PRODUCTS DIVISION

260 South Broad Street, Philadelphia 1, Pa. Chamber of Commerce Building, Pittsburgh, Pa. Hospital Trust Building, Providence 1, R. I.

When inquiring check CP 4730 on handy form, pgs. 2-3



Amberlite deionized water stops corrosion and scale in Diesel-train heaters

Water impinges on the surface of the flash boiler in a Diesel train . . . turns instantly into steam . . . leaves no deposit to clog and corrode steam lines. It's AMBERLITE deionized water!

Industry after industry has turned to AMBERLITE Ion Exchange Resins to produce deionized water comparable in quality to single distilled; to soften boiler feed water; to reduce alkalinity and total dissolved solids; and regulate make-up quality with a minimum of equipment, space and maintenance.

You'll find, too, that in many chemical processes you can eliminate costly steps and improve quality with the AMBERLITES. Our staff will be glad to discuss potential applications of AMBERLITE IR-100 (cation exchanger) and AMBERLITE IR-4B (acid adsorbent).

Time-Tested Uses and New Ideas Worth Investigating Our booklet "THE AMBERLITES" suggests many applications for these time-tested Ion Exchange Resins -some applications already commercially established, others pointing the way to new fields of investigation. For your copy of this booklet, address The Resinous Products & Chemical Company, Department CP-1, Washington Square, Philadelphia 5, Pa.

AMBERLITE is a trade-mark, Reg. U. S. Pat. Off.

THE RESINOUS PRODUCTS 9/9 EMICAL COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA

Cellular Glass Pipe Insulation for Both Hot and Cold Lines

Non-combustible, water and vapor proof; easily cut, fitted, with ordinary tools

USES - Pipe protector for process industries where exact temperature control is required, wherever heat is to be retained or excluded.

FEATURES — Can be used for both hot and cold lines, indoors and outdoors. Retains original insulation efficiency permanently. Unaffected by humidity and is highly resistant to fumes, vapors, acid atmospheres, and many other elements which cause many insulating materials to lose value. Foamglas has same thermal conductivity whether



Cellular glass insulation for all pipe sizes

wet or dry. Maintains its original low rate of heat transfer permanently, regardless of exposure and without waterproofing or other protective coverings.

DESCRIPTION — Foamglas pipe-insulation is of cellular glass construction. It is composed of the same material and possesses the same characteristics as the Foamglas blocks and shapes used on tanks, towers, ducts and breechings, and the standard Foamglas slabs used for roof, wall and floor insulation. The insulation comes in two equal half-sections, 18 inches long and is available for all sizes of pipe. When installed according to specifications it may be used through temperatures ranging from minus 200 degrees F. to plus 800 degrees F.

Its imperviousness to water and water vapor is of vital importance in industrial fields, especially where gases, fumes and moisture are hazards to many insulating materials.

SOURCE - Pittsburgh Corning Corp., Dept. CP, Pittsburgh, Pa. . . . or for more information check CP 4732 on handy form, pages 2 and 3.

Tetrahydropyran Potent Solvent for Natural, Synthetic Resins

Available in limited quantities for research and development purposes

USES - Lacquers and plastics can be prepared by dissolving certain organic film-forming substances in tetrahydropyran. The liquids are colorless. Modifiers, dyes, pigments, and plasticizers may be added.

FEATURES — Tetrahydropyran is a powerful solvent



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Chemical Iron Here's a quality product of uniform

purity and consistency. This Iron Powder, ground especially for the chemical trade, is available in all grades and meshes. Manufactured by a company in business for over 73 years. Write for free samples.



3154 S. California Ave., Chicago 8, Illinois Elizabeth, N. J. . Los Angeles, California

When inquiring check CP 4733 on handy form, pgs. 2-3



Discoloration and chemical breakdown due to high temperatures and exposure.

Permits Milling and calendering of vinyl resins at high temperatures.

Produces Clear, transparent films and extrusions.

Write to us for details, samples, and prices.



When inquiring check CP 4734 on handy form, pgs. 2-3 APRIL, 1948

for many natural and synthetic resins including the following: Rosin, ester gum, Manila copal, shellac, ethyl cellulose, cellulose acetate, polyvinyl chloride, vinyl chloride polymers, chlorinated polyvinyl chloride, vinylidine chloride copolymers, alcohol-soluble phenolic resins, polystyrene, chlorinated rubber.

DESCRIPTION - Tetrahydropyran is a cyclic ether, similar to tetrahydrofuran in physical properties and reactions. Chlorination yields mono,di-,tri-, and tetrachlorotetrahydropyrans. Tetrahydropyran reacts with acid chlorides to form omega-haloamyl esters. Conversion to dihalides such as 1, 5-dibromopentane and 1,5dichloropentane can be effected. Many mono- and disubstituted derivatives of pentane can be obtained from the dihalide. Tetrahydropyran reacts with ammonia and aliphatic and aromatic amines to form piperidine and substituted piperidines.

Properties: Colorless, mobile liquid of ether-like odor. Molecular weight is 86.13; boiling point 88°C (190.4°F) at 760 mm. Specific gravity 20° C/4° C. — 0.8814. Refractive index N20/D — 1.420. Flash point - minus 20°C (-4°F). Miscible with water but less soluble in hot than cold water. Immiscible with water at 100°C. Miscible with alcohol, ether, and most of the common organic solvents.

The following precautions are recommended. Keep tetrahydropyran away from open flame. Use with adequate ventilation. Avoid prolonged or repeated breathing of vapor. Avoid prolonged or repeated contact with

SOURCE — E. I. du Pont de Nemours and Company (Inc.) — Electrochemicals Dept. — Dept. CP, Wilmington 98, Del. . . . or for more information check CP 4735 on handy form, pages 2 and 3.

Liquid Cleaners Need No Mixing Before Use in Steam Machines

Dissolve instantly in cold water, leave no film or white deposits

USES — These materials are especially suited for use in steam gun and vapor cleaning equipment which are in service in plants to thoroughly clean equipment, walls, other areas that present difficult problems involving deposits and films of grease, oil, dust, etc.

FEATURES — Both types are in clear, colorless liquid form and do not clog valves of the cleaning machines. They are instantly and completely soluble in cold water and there is no need for pre-mixing the cleaner in hot water before use. Can be stored for prolonged periods without lumping.

DESCRIPTION — Each of two forms is designed specifically for certain requirements. Cleaner 92-K is for light duty cleaning; 94-K for heavy-duty. Both are alkaline type products, odorless and fumeless and may be used indoors without disagreeable effect. Cleaners rinse off completely, leaving no film or white deposits. It is suggested that cleaner 92-K be used at concentration of 4 to 8 oz. to 1 gal. of water and 94-K, 2 oz. to 1 gal. of water. The cleaners are suitable for use in practically all the various makes of cleaning machines.

SOURCE — These liquid vapor cleaning compounds are the product of Magnus Chemical Co., Inc. Dept. CP, Garwood, N. J., . . . or for more information check CP 4736 on handy form, pages 2 and 3.



A Series of NON-IONIC **Emulsifying, Dispersing Agents and Detergents**

For ...

Emulsifying and Dispersing effects in the manufacture of Cosmetics ... Insecticides ... Industrial Cleaners . . . Leather.

Detergent Action

in all salt water applications and with organic solvents for safe emulsion cleaning of all kinds of oily, greasy surfaces.

CHEMICAL AND PHYSICAL CHARACTERISTICS*

Chemical Constitution: Polyalkylene ether condensates of fatty acids.

Concentration: 95% = 3%.

Compatibility: Compatible with acids and alkalies, but decompose at high concentrations. Compatible with hard and salt water, electrolytes and anionic and cationic surface-active agents.

Stability: Excellent to heat and in storage.

Solubility: Miscible with water and alcohol, as well as with toluene and naphtha or Stoddard's Solvent in presence of water (about 10%).

Completely covered in Onyx Technical Data Sheet No. IND-1.

The five members of the Neutronyx family have many other potential uses besides those indicated above. We shall be glad to cooperate with you in working out any ideas you may have for their use.

ONYX OIL & CHEMICAL COMPANY JERSEY CITY 2, N. J.

CHICAGO . PROVIDENCE . CHARLOTTE . ATLANTA . LOS ANGELES

In Canada: Onyx Oil & Chemical Co., Ltd. Montreal, Toronto, St. Johns, Que.

For Export: Onyx International Jersey City 2, N. J.



CHEMICALS FOR INDUSTRY

When inquiring check CP 4737 on handy form, pgs. 2-3

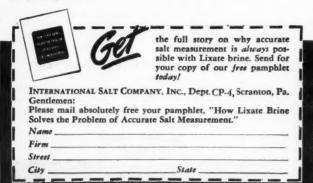
Page 29

For Accurate Salt Measurement "PASS The SALT" BY LIXATOR

In the production of chemicals, leather, textiles, plastics, soap, sulphonated oils, petroleum products, food products, in refrigerating equipment such as spray decks and unit coolers, in regenerating zeolite water softeners, the Lixator provides an extremely easy way of measuring salt accurately in the form of brine.

For the Lixator automatically and continuously makes 100% saturated, crystal-clear brine. Since each gallon of Lixate brine always contains exactly 2.65 pounds of salt, a definite volume of Lixate brine supplies a definite quantity of salt. The trouble and waste of measuring salt by hand or mechanical devices, or measuring by weight without regard to water absorption during storage, are things of the past. Both the correct amount of salt, and the rate of addition can be controlled by valves.

Leading companies in many industries are availing themselves of the Lixator's ability to measure salt accurately... to reduce labor and handling costs and to improve the quality of their products. It will pay you to investigate the Lixate Process for making brine for your plant.



HOW THE LIXATOR WORKS

In the upper zone—Flowing through a bed of rock salt which is continuously replenished by gravity feed, water dissolves salt to form 100% saturated brine. In the lower zone—Through use of the self-filtration principle originated by International, the saturated brine is thoroughly filtered through a bed of undissolved rock salt. The rock salt itself filters the brine. Nothing else is needed.



WHAT THE LIXATOR PROVIDES

- Chemical and bacterial purity to meet the most exacting standards for brine
- Unvarying salt content of 2.65 pounds per gallon of brine
- V Crystal-clear brine
- ✓ Continuous supply of brine
- Automatic salt and water feed to Lixator
- Inexpensive, rapid distribution of brine to points of use by pump and piping

Plus These Production Savings

- V Eliminates shoveling salt from storage
- V Ends hauling salt around the plant
- V Saves time wasted in making brine
- V Stops waste of salt by spilling
- Assures accurate salt measurement

The LIXATE Process

for making brine

INTERNATIONAL SALT COMPANY, INC.

Scranton, Pa.

When inquiring check CP 4738 on handy form, pgs. 2-3

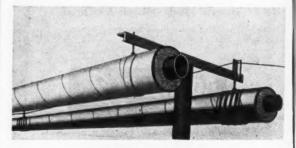
Materials

Overhead Pipe Units Distribute Oil, Process Liquids and Steam

Prefabricated 21 ft. insulated sections shipped ready for installation

USES — For overhead distribution of oil, viscous fluids, process liquids and steam.

FEATURES — Units insulated at factory to meet individual project specifications. Shipped in 21 foot sections completely fabricated and ready for installation with only one handling required at job site. Time and cost of installation are thus minimized.



Prefabricated insulated piping

DESCRIPTION — In the prefabrication of these units at the factory, asbestos, cork and other insulation is machine coated with high temperature asphalt and tension wrapped with asphalt-saturated asbestos felt. A second coating of asphalt is followed by a tension wrapping of aluminum or copper foil which forms a perfect bond with the asphalt. The result is a highly efficient, durable unit completely waterproof and weather protected.

A variant of the basic type of Foilclad unit employs a pipe supported within a pipe with insulation around the outer pipe. In this way any desired temperature may be maintained within the pipes. Either pipe can carry the process fluids while the other carries the heating or cooling medium.

SOURCE — Foilclad and various related units are available from the Ric-wil Co., Dept. CP, Union Commerce Bldg., Cleveland, Ohio . . . or for more information check CP 4739 on handy form, pages 2 and 3.

Toxaphene Effective on European Red Mite, Armyworm, Mexican Beetle

Can also be safely applied to 69 varieties of shade trees and ornamental shrubs

USES — In addition to a number of crop destroying pests on which it is most effective, Toxaphene in recent tests has demonstrated capacity to control European red mite on apples, the armyworm and Mexican beetle. Earlier reports have concerned advantageous use on the potato leaf hopper.

FEATURES — In the tests on effectiveness against red mites on apples, and on the armyworm, three different insecticides were tested with Toxaphene proving the most effective in all cases.

DESCRIPTION - Toxaphene is a technical grade of

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chlorinated camphene manufactured by Hercules Powder Co. for use in agricultural dusts and sprays. A 5% dust concentrate is as effective as a 0.75 per cent rotenone dust concentrate against the Mexican Bean beetle.

SOURCE — University of Delaware Agricultural Experiment Station, Dept. CP, Newark, Del. will supply supporting data on these findings. A bulletin describes solubility, stability, and the effect of storage on Toxaphene.

2,5-Dichlorothiophene Compound Now in Pilot Plant Quantities

Development of thiophene chemistry an interesting possibility

USES - As an intermediate in the production of pharmaceuticals, perfumes, flavorings and dyes. Increased production and consequent lower price will permit employment in larger volume fields such as synthetic resins, petroleum, rubber, synthetic detergents.

FEATURES — It is believed that the production of thiophene as a low cost tonnage chemical may result in the development of thiophene chemistry, comparable to that of benzene.

DESCRIPTION - Availability of thiophene at relatively low cost is making possible the commercial utilization of this and other thiophene compounds.

160° C.

The production of 2,5-dichlorothiophene is now in pilot plant quantities. 2-Bromothiophene and 2-Chlorothiophene were introduced by the same company several

SOURCE - Michigan Chemical Corp., Dept. CP, Saint Louis, Michigan . . . or for more information check CP 4740 on handy form, pages 2 and 3.

Coating Protects Masonry, Steel

Prevents penetration of water, dampness; seals hairline cracks

USES - For wet or dry concrete, masonry and steel surfaces. Provides a black protective coating for tanks, reservoirs, basins, structural steel, pipes, backfilled concrete or masonry. Designed to prevent penetration of water, dampness, and to seal hairline cracks. It is applied to the inside of tanks, outside of buildings below grade, and surfaces not exposed to heavy traffic or organic solvents.

FEATURES - This product, Sika Seal, is not an emulsion. It does not contain tar.

DESCRIPTION - Sika Seal forms a durable, tough, flexible black film. Two coats are applied, three in exceptional cases. Usual procedure is to clean surface of foreign matter and grease or old paint. Etch with acid and wire-brush smooth. Sika Seal is applied by brush. A reflecting silvery finish results from mixing 2 lbs. aluminum powder per gallon of Sika Seal.

SOURCE — Made by Sika Chemical Corp., Dept. CP, 35 Gregory Ave., Passaic, N. J., . . . or for more information check CP 4741 on handy form, pages 2 and 3.

Hooker Sulfides



are remarkably free from impurities

Commercial chemicals can approach the purity of laboratory chemicals. When you choose Hooker Sulfides, that's what you expect and will get in every shipment.

Manufacturing refinements and closely controlled operations result in the production of sulfides that are practically iron free. In Hooker Sodium Sulfide you will find no more than 8 ppm Fe and in the Sodium Sulfhydrate no more than 5 ppm Fe.

To safeguard your operations from uneconomical side reactions due to impurities of reactants, use uniformly high purity sulfides from Hooker.

Technical data sheets and test samples may be obtained when requested on your company letterhead.

SODIUM SULFIDE Na2S

Light yellow colored solid in flake form. Description: Rapidly soluble in water; slightly soluble in alcohol; insoluble in ether.

> Analysis Fe 8 ppm Max. Cu, Ni, Cr, Mn, Pb 1 ppm Max. Water of crystallization 36.5 to 34.5%

Uses: In unhairing hides and wool pulling; desulfurizing viscose rayon; in manufacture of dyestuffs, chemical intermediates, paper pulp, special glass, soap and rubber; as an ingredient of dye liquor for textile dyeing; in calico printing, boiling out linen; ore flotation and metal refining.

Shipping Containers: Steel drums 90 and 350 lbs. net.

SODIUM SULFHYDRATE NaSH

(sodium hydrosulfide)

Description: Light lemon colored solid in flake form. Completely and rapidly soluble in water, alcohol

M. P.55° C

> Analysis NaSH70 to 72% Na₂SO₃ and NaHCO₃0.04 to 0.4% Fe 5 ppm Max. Cu, Ni, Cr, Mn, Pb 1 ppm Max. Water of crystallization28 to 26%

Uses: In unhairing hides, in desulfurizing viscose rayon; in preparation of dyestuffs and other organic chemicals such as thioamides, thiourea, thioglycolic acid, thio- and dithiobenzoic acids, sodium thiosulfate.

Shipping Containers:

Lacquer-lined steel drums '90 and 350 lbs. net.

HOOKER ELECTROCHEMICAL

15 Forty-Seventh St., Niagara Falls, N. Y. New York, N. Y. Wilmington, Calif. Tacoma, Wash.

HOOKER CHEMICALS

Caustic Soda

Chlorine

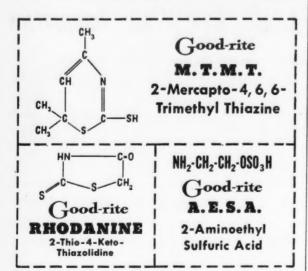
Muriatic Acid

Sodium Sulfide

Sodium Sulfhydrate

When inquiring check CP 4742 on handy form, pgs. 2-3

3 Chemicals THAT MAY OPEN UP NEW FIELDS



For detailed technical bulletins on these chemicals please write Department CG-4, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio.

B. F. Goodrich Chemical Company

A DIVISION OF THE B. F. GOODRICH COMPANY

GEON polyvinyl materials

HYCAR American rubber • KRISTON thermosetting resins • GOOD-RITE chemicals

When inquiring check CP 4743 on handy form, pgs. 2-3

Materials

Toxaphene Insecticide Emulsifier

For extremely stable water emulsions

USES — For making extremely stable water emulsions of new Toxaphene insecticide.

DESCRIPTION — A concentrate of the Toxaphene and emulsifier is first produced by means of various formulations. The latter are described in available literature. The concentrate is readily miscible with waters of any hardness.

SOURCE — The Emulsol Co., Dept. CP, 59 East Madison St., Chicago, Ill. . . . or for more information check CP 4744 on handy form, pages 2 and 3.

Synthetic Resin Imparts Better Color in Printing Inks

Made in color range paler than usual phenolicmodified rosin esters

USES — Designed specifically for use in printing inks. Enables production of overprint varnishes of improved initial color and reduced after-yellowing; and imparts better coloring in printing inks. It is designed to aid ink technologists in securing greater uniformity in ink vehicles based on phenolic-modified rosin esters.

FEATURES — Pentalyn 802-A Pale imparts a higher viscosity to linseed and China wood oil overprint and gloss vehicles, without sacrificing varnish stability or

MORE NEW RARE CHEMICALS

from Genesee Research Laboratories

HOOC -0-- COOH

4, 4' Dicarboxy Diphenyl Ether

Cos. 4-Bromo-1,3-Dimethyl Benzene

°H 2-Amino-4-Nitrophenol

O_{NO}, meta-Nitrophenol

CH₃(CH₂)₈CHO n-Decyl Aldehyde

45 OTHER RARE ORGANIC CHEMICALS

Send for Products List Inquiries for other rare organics Invited



When inquiring check CP 4746 on handy form, pgs. 2-3

KESSCO PRODUCTS

CHEMICAL SPECIALTIES

FATTY ACID ESTERS

DIBUTYL TARTRATE BUTYL STEARATE
BUTYL "CELLOSOLVE" * STEARATE METHYL

METHYL "CELLOSOLVE" OLEATE

*TRADEMARK OF C & CCC

STEARATES PALMITATES

OLEATES

RICINOLEATES

LAURATES

for the

Textile, Cosmetic, Pharmaceutical, Petroleum, Plastic and Allied Industries

KESSLER CHEMICAL CO., INC.

STATE ROAD and COTTMAN AVE., PHILADELPHIA 35, PA.

When inquiring check CP 4745 on handy form, pgs. 2-3

A NEW RAW MATERIAL... SILVACON

Brings You the Protective and Insulating Qualities of Douglas Fir Bark

WEYERHAEUSER separates Douglas fir bark into new raw materials—cork particles, lignified fibers, powdered amorphous material—named SILVACON. These three fractions may be used singly or in prescribed combination. SILVACON is dry, free-flowing, plentiful,uniform.

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CP

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with Silvacon, plastics meet quality specifications at reduced coats; phenolic resins are extended to new limits; magnesite flooring has greater wet strength; rubber compounds are lower in cost. There are many more proved uses—and experiments continue to extend SILVACON'S potential.

LEARN ABOUT SILVACON, so basic that its variety of uses is certain to have rewarding applications in your business.

Write for Literature and FREE Samples

Ask for our folder detailing physical and chemical properties of five SILVACON fractions. It lists proved and experimental uses to help you in your own product development work. We'll send free samples on request. Our development engineers and field representatives will furnish technical assistance. Write, Weyerhaeuser Timber Company, SILVACON Dept., Longview, Wash.

A PRODUCT OF MEYER PRODUCT OF MENT SILVACOR
BUILDING AMERICA'S FORESTS FOR AMERICA'S FUTURE

When inquiring check CP 4747 on handy form, pgs. 2-3

ne

pigment reactivity. The new resin is produced in a color range paler than that of other phenolic-modified rosin esters.

DESCRIPTION — Pentalyn 802-A Pale is a phenolic-modified pentaerythritol ester of rosin and is the latest in a series of pentaerythritol resins developed by this company. It is one of the few synthetic resins developed especially for printing inks.

SOURCE — Hercules Powder Co., Dept. CP, Wilmington, Del. . . . or for more information check CP 4748 on handy form pages 2 and 3.

Versatile Intermediates Used in Mothproofing, Medicinals, etc.

Ortho and para dichlorbenzene

USES — Widely used as industrial intermediates and for mothproofing. The principle use of ortho dichlorbenzene is as a dye intermediate, but it also is an important solvent. Para dichlorbenzene, in addition to being used for inhibition of moth attack, is a versatile intermediate for the production of medicinals, dyestuffs and other industrial chemicals.

DESCRIPTION — In the plant producing these chemicals, an electrolytic process is used to obtain chlorine and other chemicals from rock salt, which is the base raw material. The chlorine, with the addition of a catalyst, is passed through benzol to produce the other products.

SOURCE — These intermediates are the product of the Heyden Chemical Corp., Dept. CP, 393 7th Ave., New York, 1, N. Y. or for more information check CP 4749 on the handy form, pages 2 and 3.

Swedish Tall Oil Pitch

Melting point is 110 degrees F.

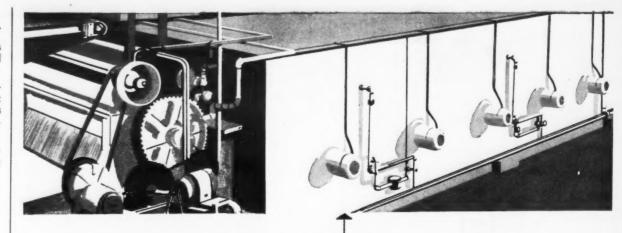
DESCRIPTION — Large tonnages of tall oil pitch are now available from the largest tall oil plant in Sweden through New York distributor. The material has the appearance of a low grade rosin. The melting point is 110 F, and the acid number is 138.2(Wijg). The product can be landed in New York for less than 4c per pound.

SOURCE — Gaston Johnston Co., Dept. CP, 865 First Ave., New York 17, N. Y., . . . or for more information check CP 4750 on handy form, pages 2 and 3.

Computer Shows Corrosion Resistance of Metal Fasteners for Many Applications

Handy computer shows qualitative corrosion resistance of stainless steels, monel metal, silicon bronze, brass and naval bronze, and copper when used with over 125 mediums. Setting the name of medium on alphabetized selector slide automatically rates the metals as either excellent, good, fair or not good. Further qualifications are given where needed.

Issued by The H. M. Harper Company, Dept. CP, 2620 Fletcher St., Chicago 18, Ill. When inquiring, specify CP 4751 on handy form, pages 2 and 3.



take a look
at the latest
in pigment production!
RCl's revolutionary continuous

process on

CHROME YELLOWS

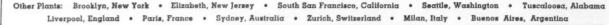
RCI technical leadership in chemical color production again advances quality and keeps prices in line. The new continuous process on Chrome Yellows means faster service on these popular pigments because manufacturing is speeded up to a mere 4 hours from precipitation to packaging. Absolute uniformity

is another result—electronic instruments control every step. Volume of production is, of course, greatly increased, and quantity orders can be quickly filled. For further facts write direct to the Sales Department at 105 Bedford Avenue, Brooklyn 11, New York.

CHEMICAL COLOR DIVISION

REICHHOLD CHEMICALS, INC.

General Offices and Main Plant, Detroit 20, Michigan



CHEMICAL COLORS . SYNTHETIC RESINS . PHENOLIC PLASTICS . INDUSTRIAL CHEMICALS

When inquiring check CP 4752 on handy form, pgs. 2-3

Wherever you look, ingenious chemists are winning the "battle for sales" for their products with taste and scent appeal.

SMELLS LIKE A

Men's hats sell more-because they're scented! Stationery sells faster - because envelope gum tastes delicious! Work clothes become a college fashion - because a neutralizing oil took the odor out!

Now - how about your product? Have you explored the potent sales possibilities available through the medium of flavoring, perfuming or neutralizing oils?

THINK IT OVERthen, call on MM&R





Las Angeles: Braun Corp. . Santtle, Portland, Spekane: Van Waters & Rogers, Inc. . San Francisco: Braun-Knocht-Holmann-Co.

When inquiring check CP 4753 on handy form, pgs. 2-3

Pentaerythritol Used in Synthetic Resins

Superior properties imparted to finished films of surface coatings

USES - In manufacture of synthetic resins for surface coatings. Because of the superior properties they impart to surface coatings, pentaerythritol alkyds and ester gums are of interest to the paint, varnish and lacquer industries.

FEATURES - The technical grade of pentaerythritol, used in resin manufacture, is a eutectic mixture of approximately 86% pentaerythritol and 14% polypentaerythritol. The polypenta portion consists chiefly of dipenta and successively less tripenta and higher pentas. The polypentas present in technical penta bring about faster polymerization of alkyd resins and give ester gums a higher melting point.

Alkyds made with pentaerythritol are in increased favor with the surface coating industry. Extreme hardness, fine initial gloss, gloss retention, water resistance and good through-dry of the vehicles are responsible for this acceptance.

Because of the increasing functionality of penta and polypenta over glycerine, the substitution of penta for glycerine makes it possible to use less of such modifying agents as phenol condensates and maleic anhydride and still produce equivalent and often better gums.

SOURCE - Reichhold Chemicals, Inc., Dept. CP, Detroit 20, Mich., or for more information check CP 4754 on handy form, pages 2 and 3.

Gives Basic Facts for Better Bone Char Revivification

Technical status of bone char revivification on the basis of actual refinery data is revealed in a 300-page, illustrated report. Surveys patent literature on kilns, points out processing problems, describes experi-

Discusses efficiency of kiln operation, removal of moisture from exhausted char, heat transfer characteristics, sources of attrition of char, and filter tests. "Preliminary Survey of Bone Char Revivification and Filtration." Price, \$3.

Remit direct to Treasurer of US, Publications Section, Nat'l Bureau of Standards, Washington 25, D.C.

PRUFCOAT PROTECTO-GRAPH PROTECTO-GRAPH PROVES: 10 YEARS SAVE painting maintenance costs ... up to 70%

Now you can prove — in black and white — that your painting costs can be cut 50%, 60% — even 70%! Here's how it works: A Protecto-Graph Plan will be sent you on request. When you receive it, fill out the Analysis Sheet with

Prufcoat outlasts ordinary

paints as much as 10 to 1

A special formulation

A special formulation of synthetic resins, Prufcoat polymerizes to a film with virtually a zero acid number, saponification number, water absorption rate. Thus, on masonry, metal or wood surfaces, Prufcoat airdries to a tough acid, alkali, alcohol, oil and water-proof coating. That's why in the presence of strong acids and caustics, Prufcoat often outlasts ordinary paint as much as 10 to 1.

Here's a typical report from one user: "Prufcoat on concrete col-umns and walls in muriatic acid

manufacturing room still in sound condition after five years

- formerly repaired and re-

information requested and return to Prufcoat Laborreturn to Prufcoat Laboratories. From this information, Prufcoat engineers will graph out the
cost of painting by your
present method compared
with cost of doing the
same job with Prufcoat.
You'll be amazed at the
saving! Don't delay —
get proof — get your get proof — get your Protecto-Graph Plan.

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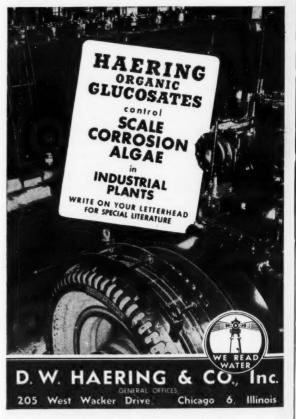
Write today.

Profesat Laboratories Incorporated 63 Main St., Cambridge 42, Mass.



@ 1948 Prufcoat Laboratories, Inc.

When inquiring check CP 4755 on handy form, pgs. 2-3



When inquiring check CP 4756 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

RAPH

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s. 2-3

Fiberglas Cord Gives Steam Hose Greater Strength, Flexibility

Carries saturated steam at 388° F. at pressure of 200 lbs.

USES — For industries that require hose that will conduct saturated steam under high pressure.

FEATURES — Possesses the strength to withstand the steam pressure, since a sudden blowout would be extremely dangerous to men using it. In addition to strength it also possesses flexibility and does not have any undue bulk. In spite of constant flexing it does not develop mechanical breakdowns which could lead to blowouts.

DESCRIPTION — This new hose is a product of Goodyear and represents the result of joint researches carried on by its scientists and engineers and also those of the Owens-Corning Fiberglas Corp. A most unusual machine makes possible the production of this hose.

It imitates the familiar gyrations of a Maypole dance. More exactly, the machine braids glass cords that go between the outer and inner layers of rubber. Essen-

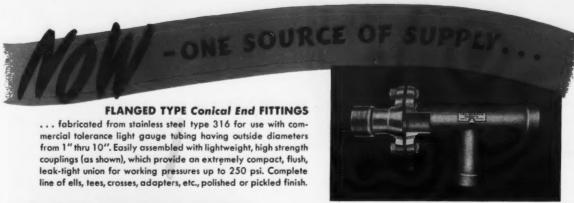


Glass-cord steam hose does heavy-duty cleaning job in refinery tially, this braider is a great steel circle, 6 feet, 6 inches in diameter, set on its side. The "dancers" who perform gyrations around the rim of this circle are 48 carriers, each carrying along a cord made of fiberglas. The cords are braided around a rubber tube which forms the interior of the hose. Another machine puts an outer layer of rubber over the braided glass cords, completing the hose.

The fiberglas cords that provide a solution to the unusual requirements for hose fabric in this case are only 25/1000 of an inch in diameter and result in a wall only 9/32 of an inch thick.

The hose carries saturated steam at a temperature of 388 degrees Fahrenheit at a pressure of 200 pounds. In tests the hose has stood up under continuous flexing at 200 pounds working pressure.

SOURCE — A development of Goodyear Tire & Rubber Co., Dept. CP, Akron, Ohio . . . or for more information check CP 4757 on handy form, pages 2 and 3.



FOR ALL 5

"Zephyrweld" WELDING FITTINGS

... in sizes from 1" thru 24"O, D., fabricated in gauges from 16 to 10, for use with stainless steel light gauge O. D. tubing, under broad corrosive conditions requiring semi-permanent or permanent welded line installation. Complete line of ells, tees, crosses, adapters, etc., in stainless steel types 304, 316, 347... available polished or pickled finish.

"Sanitary" TYPE FITTINGS

... available in both stainless steel and nickel alloy in a complete range of fitting and valve types, from 1" thru 4"—Includes all fittings accepted and approved by International Assn. of Milk Sanitarians, U. S. Public Health Service and Dairy Industry Committee.



Recessed-End FITTINGS

... a new, complete line of ells, tees, crosses, etc., for soldering, brazing or welding...provides fast, low cost line installation—available in stainless steel types 304-316-347, in either pickled or polished finish. Sizes from 1" thru 10".



SEND FOR COMPLETE CATALOGS . . . All 5 types of TRI-CLOVER fittings are fully described and illustrated in individual catalogs. Send for your copies today, mentioning in which of the types you are interested.

... fabricated from stainless steel type 316, permits the use of thin wall stainless steel tubing in connection with standard threaded iron pipe size fittings of all kinds... saving from 25% to 45% in material without any loss of effectiveness. Available polished or pickled finish.

Vallace PIPE UNION



TRIALLOY AND STAINLESS STEEL SANITARY FITTINGS, VALVES, PUMPS, TUBING, SPECIALTIES FABRICATED STAINLESS STEEL INDUSTRIAL FITTINGS AND INDUSTRIAL PUMPS

HE Complete LINE

When inquiring check CP 4758 on handy form, pgs. 2-3

MERIAM INSTRUMENTS FOR INDUSTRY

For 37 years we have been solving measurement problems by supplying standard or special instruments to accurately measure pressures, vacuums and flows of liquids and gases. We have constantly improved, developed and diversified the line so as to meet fully all needs of the field.

U-TYPE MANOMETERS

The Clean-Out Manometer (at left) for line pressures up to 100 lbs. per sq. in. A wing nut permits the Manometer body and tube to be disconnected from the head — the tube cleaned with a brush furnished or tube replaced, and the instrument reassembled without disconnecting the head section from the piping. Send for Bulletin No. 1.

The Model A-995 WM Manometer for line pressures up to 400 lbs. per sq. in. These instruments are built with heavy walled annealed straight Pyrex tubes, gland packed top and bottom in steel end blocks and clamped to the body at fixed intervals to prevent distortion. Catalog Sheet A-995 WM gives complete details.



Model A-275 WM (at left) is a direct reading type for line pressures up to 150 lbs. per sq. in. Standard construction; ranges—from 6" to 24". Wall mounted type shown; also available in flush mounting. Ask for Catalog Sheet A-275 WM.

SIGHT FEED BUBBLER

This Sight Feed Bubbler with 2½" dia. bowl of Pyrex glass is good for line pressures up to 50 lbs. per sq. in.; of plastic, for pressures up to 100 lbs. Sturdily built with brass or semi-steel body. Supplied in ring type (shown) and strap type. Needle valve controls bubbler rate. Ask for Bulletin 21.



THE MERIAM INSTRUMENT CO.
20 940 MADISON AVENUE - CLEVELAND 2, OHIO
Westers Birisles: 1418 Wilsse Are., San Harino 8, Calif. - In Casada: Peaceck Bres., Ltd., Hostrad



MANOMETERS, METERS AND DAUGES FOR THE ACCURATE MEASUREMEN OF PRESSURES, VACULINE AND FLOWS OF LIQUIDS AND GASES

When inquiring check CP 4759 on handy form, pgs. 2-3

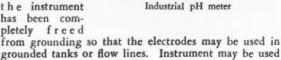
Process Instrumentation

Industrial pH Meter Has Two Stages of Voltage Regulation

USES — Useful in pH determinations.

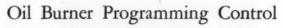
FEATURES — New unit includes two stages of voltage regulation, permitting voltage variations from 80 to 135 volts; to eliminate difficulties arising out of widely varying factory voltages.

DESCRIPTION
— pH meter is
line operated,
direct-reading
and continuous
indicating. Electrical circuit of
the instrument
has been completely freed



for controlling and recording.

SOURCE — Made by Macbeth Corporation, Dept. CP, 227 W. 17th St., New York 11, N. Y. . . . or for more information check CP 4760 on handy form, pages 2 and 3.



Automatically starts burner; programs fuel valve opening, post-ignition, etc.



Programming control

USES — Provides automatic starting and programming control for commercial and industrial oil burning equipment. It is used with photo-electric flame failure scanner (Type 45 PH 5) which protects the oil burning installation from hazard of flame failure.

FEATURES — All power contacts have snap action on opening and closing. The power relays are located with power contacts, readily accessible for cleaning.

DESCRIPTION — This control system incorporates many unique design features. The timing cams are driven by a specially designed, high torque synchronous motor. The fuel valve delay and post-ignition periods

can be easily set upon installation, and a calibrated dial clearly indicates the timing adjustment in seconds. Specifications: Supply voltage 115/230 V. 60 c. Load Rating: Burner motor — 1 HP, 115 V., 60 c. Pilot Duty — 125 VA, Ignition 250 VA, Fuel Valve Solenoid — 100 VA. Timing periods: Scavenging period — 23 seconds. Fuel valve delay 5-30 seconds. Post ignition period — 30 seconds minimum to maximum of 80 seconds. Bulletin CD4751

SOURCE — Manufacturer is Combustion Control Corp., Dept. CP, 77 Broadway, Cambridge 42, Mass., . . . or for more information check CP 4761 on handy form, pages 2 and 3.

gives further details.

Ionization Chamber Records Exposure to Radioactivity

Pocket ionization chamber is similar in appearance to fountain pen

USES — Meter may be used to provide a record of the radia to which its wearer has been exposed in working with radioactive materials.

FEATURES — Chamber is durable, thus eliminating the need for more than one unit to be carried. Soaking in water and dropping on the floor do not affect its durability.

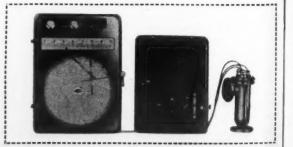
DESCRIPTION - Model 3340 chamber is constructed

A CCURATE PH CONTROL

... Automatically

If your product or process requires control of pH, you get improved quality...greater uniformity...lower processing costs. Proper pH control also minimizes corrosion, decreases maintenance costs and eliminates water pollution resulting from plant wastes.

Bristol Continuous Recorders and Controllers make sure that you keep pH exactly where you want it. Hundreds of successful installations now in use. Write for Bulletin pH 1302. THE BRISTOL COMPANY, 141 Bristol Rd., Waterbury 91, Conn.



THE BRISTOL COMPANY
141 Bristol Road, Waterbury 91, Connecticut

When inquiring check CP 4762 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

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of gray plastic, with a spring clip which holds it firmly to the pocket or any part of the clothing. A safety cap is held onto the case by friction, and protects the metal contact point on one end of the meter. Contact point is sealed onto a plastic diaphragm which



Pocket ionization chamber

does not contact the inner electrode until it is pressed in.

SOURCE — Meter is a product of Instrument Development Laboratories, Dept. CP, 223 W. Erie St., Chicago, Ill. . . . or for more information check CP 4763 on the handy form, pages 2 and 3.

Adjustable Angle Thermometer

Stem or case positioned to any angle by turn of lock nut



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USES — Can be used for any conventional industrial angle thermometer application.

FEATURES — Simplifies installation and affords greater visibility at odd angles. Breakage in transit, installation and operation minimized.

DESCRIPTION — Furnished with any of the standard connection forms and can be supplied with stems and fittings for any service in any desired metal. It reduces the number of instruments required in stock for plant maintenance.

Angle thermometer

Easy interchangeability from one angle to another. Except for the

feature of adjustibility the thermometer adheres to the construction of standard industrial thermometer plus the variable ball connections and flexible capillary which is fused to the glass stem on the thermometer.

SOURCE — Product of Weksler Thermometer Corp., Dept. CP, 52 W. Houston St., New York 12, N. Y., . . . or for more information check CP 4764 on handy form, pages 2 and 3.

80 Page Catalog Points Out Uses of Recorders, Controllers, Meters in Paper Industry

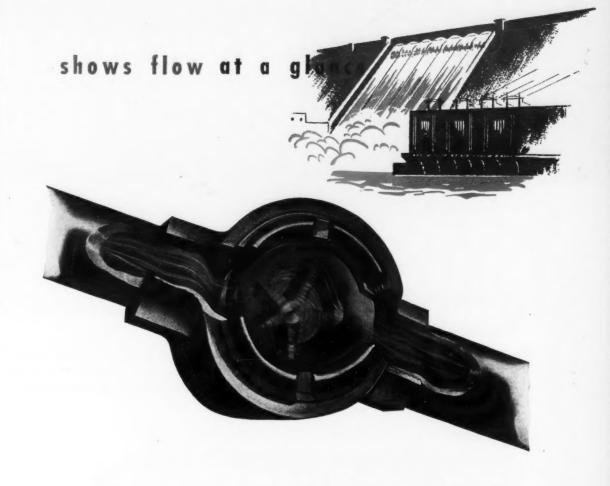
Descriptions of 26 typical process control instrumentation applications for the pulp and paper industry are given. Complete schematic diagrams are included. Applications include rotary and spray type sulfur burning systems control, measuring tank control, recovery and lime kiln instrumentation, dryer control, moisture measurement, bleach plant instrumentation.

Specifications and photographs of equipment are included.

The Moist-O-Graph and Modified Area Meter Body are described. A section is devoted to bulb specifications, thermometer recording scale and temperature-pressure chart specifications. Bulletin 2801.

Issued by the Brown Instrument Co., Dept. CP, Philadelphia 44, Pa. When inquiring, specify CP 4765 on handy form, pages 2 and 3.

an fi "reason why"



An SK Rotary Flow Indicator . . .

Installed in a pipe line . . .

Permits observation of flow . . .

Shows the condition of fluids . . .

At a glance.

The slightest fluid flow . . .

Causes rotation . . .

Of a five-bladed, plastic rotor . . .

Whose motion can be observed . . .

Through one or two sight glasses . . . At one or opposite sides of the indicator.

By installing an SK Flow Indicator...

Power can be conserved...

Costly batches can be saved...

Continuous process can be maintained...

And equipment damage prevented.

SK Bulletin 18-W contains complete details... Send for your copy—today.

SCHUTTE and KOERTING Company



Manufacturing Engineers

1173 THOMPSON ST., PHILADELPHIA 22, PA.

JET APPARATUS - CONDENSERS AND VACUUM PUMPS - NEAT TRANSFER EQUIPMENT VALVES - ROTAMETERS - FLOW INDICATORS - GEAR PUMPS - STRAINERS OIL DURNING EQUIPMENT - SPRAY MOZZLES AND ATOMIZERS - RADIAFIN TUBES

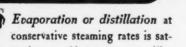
When inquiring check CP 4766 on handy form, pgs. 2-3

HOW TO ASSURE SILICA-FREE WATER FOR HIGH-PRESSURE BOILERS

Deposits of Silica on turbine blades and walls form a tenacious coating that causes unbalance, restricts port areas and is difficult to remove.

Here are three ways by which silica (as well as the other dissolved solids) can be removed from feed water. It will pay you well to make these simple comparisons.

OLD METHODS



isfactory but expensive: at high pressures, silica carries over.

Demineralization by sodium fluoride method ... removes silica: but the process involves storing, handling, proportioning, and recovery of dangerous fluorides.

NEW, LOW-COST SAFE METHOD

CYANAMID'S FILT-R-STIL*

Demineralizers will produce

silica-free, mineral-free water efficiently, at lower cost than either of the old methods, and without the use of fluorides! Cyanamid's process involves no dangerous fluorides or special proportioning equipment. Silica removal is made possible by the IONAC* anion exchanger resin contained in our standard demineralizers. Unlike many anion exchangers, IONAC Resin A-300 can be activated with NaOH rather than Na₂CO₃, without

affecting its life in use. This NaOH activation, combined with Cyanamid's systems of demineralization, permits the efficient removal of SiO₂ as well as stronger acids. Water that is directed into a FILT-R-STIL Demineralizer is stripped of essentially all its troublesome silica as well as dissolved ionized solids. And all this is done quickly, at a new low in cost!

Write today for detailed technical data describing the advantages of FILT-R-STIL Demineralizers for silica removal.

AMERICAN CYANAMID COMPANY

ION EXCHANGE PRODUCTS DEPARTMENT 30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

Reg. U. S. Pat Off.

Process Instrumentation

Large Dial Electrical Meter Easily Read at a Distance

Has 5½" scale length and a 100° arc

USES — General purpose instrument for electrical measurements.

FEATURES — Large dial may be easily read at a distance, and allows plenty of space for a multi-range scale.

DESCRIPTION — Instrument measures $6\frac{1}{2}$ " by $5\frac{1}{4}$ ". Fills the gap between $4\frac{1}{2}$ and 8 inch meters, has a 100° arc, $5\frac{1}{2}$ inch scale length and large open face making it easily adaptable to multi-arc dials.

Bakelite case has extra heavy cross sections to stand up under the most rugged use. Alnico II magnets are used in all normal ranges and Alnico V in the more sensitive ranges.

SOURCE — Made by Marion Electrical Instrument Company, Dept. CP, Manchester, N. H. . . . or for more information check CP 4767 on handy form, pages 2 and 3.

Small Size Temperature Recorder Resists Shock and Vibration

Instrument is available in models to operate in a wide variety of ranges

USES — Designed for use in the many applications where a shock-resistant, easily portable temperature recording instrument is necessary.

FEATURES — Penarm is "jiggle-proof," and thus temperature record is unaffected by vibration. Unbreakable plastic front permits full view of entire chart and pen-arm.

DESCRIPTION — Instrument is available in two forms: single-pen recording thermometer for recording temperatures only, and two-pen temperature and time-operation recorder, which charts running time of refrigeration motors in addition to recording temperature.

Chart drive is a 7-day spring-propelled mechanism with charts of 24 or 72 hours duration. Each recorder

For more information on product at left, specify CP 4768... use information request blank between pages 2-3.

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is enclosed in aluminum case with smooth, black enamel finish. Overall dimensions are: 5¾ inches square by 4¼ inches deep, total weight is less than 3½ pounds. SOURCE — Made by C. J. Tagliabue Mfg. Co., a subsidiary of Portable Products Corp., Dept. CP, Park and Nostrand Aves., Brooklyn 5, N. Y. . . . or for more information check CP 4769 on handy form, pages 2 and 3.

Rapid Titrator Eliminates Errors in Drainage and Meniscus Reading

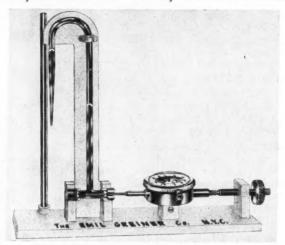
Has total displacement of 0.1 ml. (in 0.0001 ml.) with accuracy of 0.03% of total displacement

USES - Designed to meet the most exacting requirements for an instrument capable of rapid titration with complete elimination of manipulation.

FEATURES — Principle of operation eliminates errors in drainage and meniscus reading, and permits ease of manipulation together with the high precision.

DESCRIPTION - In this Ultra-Microburet, a precision stainless steel plunger displaces mercury in a reservoir, sealed off by a silicone rubber gasket contained in an aluminum bushing. Displaced mercury in turn forces a precisely determined amount of titrating solution through the fine orifice immersed in the solution being

Diameter of the plunger is ground to the required size so that the precision dial micrometer gauge reads directly in volume units. Mercury reservoir is made as



Microburet has high degree of precision

small as possible so that temperature fluctuations are made as negligible as in ordinary macro titrations. Back diffusion into the capillary tube has been found to be practically eliminated by virtue of the fine orifice. Stirring of solution may be effected by a fine stream of air bubbles.

Constructed of corrosion-resistant materials. Total displacement 0.1 ml. (in 0.0001 ml.) with accuracy of 0.03% of total displacement. Microburets for total displacements of 1 ml. (in 0.001 ml.) or 0.01 ml. (in 0.00001 ml.) are also available on special order.

SOURCE - Gilmont Ultra-Microburet is a development of The Emil Greiner Company, Dept. CP, 161 Sixth Ave., New York City. . . . or for more information check CP 4770 on handy form, pafes 2 and 3.



Leading scientific and industrial organizations have already discovered the many important savings in time and labor, the reduction in waste, and the greatly increased control efficiencies made possible by the Beckman Quartz Spectrophotometer...

Now from the Beckman development laboratories comes another advancement that increases still further the wide-range versatility and adaptability of the Beckman Quartz Spectrophotometer to various analytical and control problems. It is the Beckman Flame Photometer - a compact easily-attached unit that simplifies both qualitative and quantitative analyses of a large number of chemical elements. Its use of a hot flame is an important advantage, for this feature permits excitation of the spectral lines of a larger number of elements, including many heavy metals and alkaline earths - whereas a "cool flame" instrument excites only those of the alkali metals.

MANY APPLICATIONS

The Beckman Flame Photometer is a valuable aid to a wide variety of analytical problems, including water analyses . . . metal and ore analyses . . . determination of inorganic traces and impurities in foods, chemicals, biologicals and pharmaceuticals, and in organic materials which can be reduced to inorganic solutions.

Only a small sample is required for a complete analysis and full advantage is taken of the high resolving power and photometric accuracy of the Beckman Spectrophotometer, permitting versatility and sensitivity greater than 0.01 p.p.m. This accuracy far exceeds that obtained with filter-type or other less sensitive instruments...and the hot-flame advantages already outlined further increase the wide range versatility and accuracy of the Beckman Flame Photometer. Write for full details on the many important savings this Beckman development makes possible in modern control applications. Beckman Instruments, National Technical Laboratories, South Pasadena 11, California.

A few of the many BECKMAN Flame Photometer Advantages

➤ SIMPLE OPERATION: Samples are atomized and intro-duced at a uniform rate into a very hot oxygen and gas flame through a specially designed burner. The spectral emission lines of the elements are excited and the Spectrophotometer isolates these lines and measures their intensities relative to a blank of

standard.

RAPID ANALYSES: Because samples are atomixed directly from external beakers, samples can be analyzed very rapidly. A rate of four samples per minute is sealily maintained—and e-checks against blanks can be quickly made at any time.

QUICK, DIRECT READINGS: Results are instantly and directly readable on an accurately-colibrated dial. No photographic processes or densitometer comparisons are necessary.

graphic processes or densitometer comparisons are necessary.

MAXIMUM VERSATILITY: Unlike "cool flame" instruments which excite the spectral lines of alkali metals only, the hot flame of the Beckman Flame Photometer excites those of many elements, including heavy metals and alkali earths. This advantage, coupled with the very high resolving power and photometric accuracy of the Beckman Quarts Spectraphotometer, permits the accurate analysis of an unusually wide range of elements.

FULL SPECTRAL RANGE: Because of the wide spectral range of the Beckman Quartz Spectrophotometer, the Flame Photometer can be used in the ultraviolet, visible and near infra-red spectral regions, insuring maximum range and adaptability.

NONLY SMALL SAMPLES REQUIRED: Sample consumptian rate is less than two-tenths cc. per minute...and complete analyses can be made on samples as small as 5 cc.

HIGH SENSITIVITY: Even very small traces of elements can be quickly and easily detected with the Beckman Flame Photometer... traces as small as a few parts per billion, depending upon the element being determined.

D UNIFORM ACCURACY: The temperature of the flame and rate of feed of the specimen can be held constant over long periods of time, permitting numerous individual measurements to be made in succession. High accuracy of the readings is not affected by fluctuations in gas or oxygen pressures.

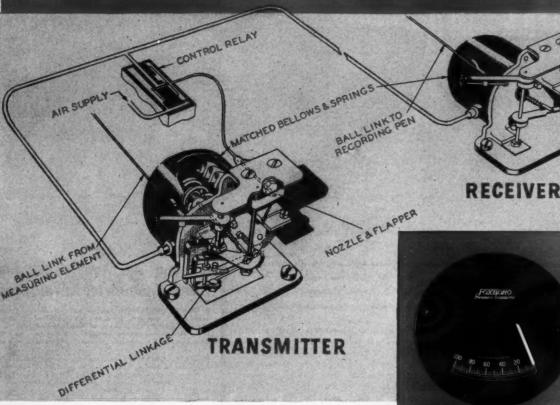
The above are only a few of many Beckman Flame Photometer features. Write for full details!



STRUMENTS CONTROL MODERN INDUSTRIES

When inquiring check CP 4771 on handy form, pgs. 2-3

NEW, ADVANCED DESIGN IN PNEUMATIC TRANSMISSION



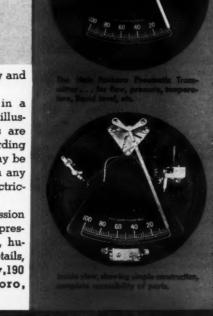
FEATURING linear calibration, the new Foxboro Model 42 Pneumatic Transmission System introduces a new standard of accuracy in long distance measurement of process variables. Transmitter and receiver elements are made to a master calibration standard, assuring precise readings at one or more distant points, with perfect interchangeability of units.

This new transmission system also features a newly designed reference (zero) arrangement which permits adjustment of the indicating pointer without affecting transmitter calibration . . . large, easy-to-read scales

. standard Model 40 air relay and exclusive ball linkage.

Transmitters are furnished in a standard 12" indicating case, illustrated at the right. Receivers are supplied in indicating or recording models, or the receiver unit may be used as the primary element in any Foxboro air-operated or electricoperated Controller.

The new Foxboro Transmission System is available for flow, pressure, temperature, liquid level, humidity, etc. For complete details, write The Foxboro Company,190 Neponset Avenue, Foxboro, Mass., U.S.A.



PNEUMATIC TRANSMISSION

When inquiring check CP 4772 on handy form, pgs. 2-3

Process Instrumentation

Dial Thermometer Stem Has Flat Surface

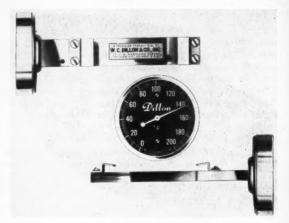
Designed primarily to clamp onto flat or rectangular surfaces

USES - Measures temperatures of flat or rectangular surfaces such as: power bus-bars, switch blades, engine blocks, water jackets, etc.

FEATURES - Flat stem design permits the heat sensitive element to fit snugly against the object under test and presents a wide heat absorbing area.

DESCRIPTION - Ordinary "C" clamps will hold it, or it can be drilled and tapped and screwed down in any desired position.

Thermometer can be supplied in flat stems of varying



Flat stem dial type thermometer

widths, thicknesses, and lengths to meet requirements. Stems are available in a wide range of metals.

Following ranges are standard: 0—200°F., 50—500°F., 150—750°F., and 200—1000°F. Centigrade ranges are available on order. 3" and 5" dials are standard.

SOURCE - A development of W. C. Dillon & Company, Inc., Dept. CP, 5410 W. Harrison St., Chicago 44, Ill. . . . or for more information check CP 4773 on handy form, pages 2 and 3.

Instrument Controls Power Input to Electric Heating Devices

Maintains constant watt-hour input regardless of wide fluctuations in line voltage

USES - This stepless temperature controller may be used with electric heating devices such as furnaces, hot plates, heating mantles, melting pots, etc.

FEATURES - Only 5 to 20 watt-hours are required to operate the unit.

DESCRIPTION - Setting of a knob on the face of the



Stepless temperature controller instrument controls a sensitive thermostatic switch

which regulates the power input anywhere between 5% and 100% time "on." Dial markings indicate the percentage of watt-hour input of the connected load. Built into the unit is a magnetic or mercury relay of ample capacity for the rated load and a standard replaceable fuse protects the device from overloads.

Connections are easily made on a large terminal panel. Openings for connecting wires are lined with grommets and for permanent installation will accommodate onehalf inch conduit fittings.

Besides the control dial, an "on" and "off" switch and neon indicating light are mounted on the front panel. Instrument measures 6" x 5" x 8" and weighs 5 pounds.

Eight models are available covering current requirements of 115 and 230 volts, 10 to 35 amperes, 25 and 50/60 cycles AC, and for DC. Various models will handle loads up to 5700 watts.

SOURCE - A development of Thermo Electric Mfg. Company, Dept. CP, 476 Locust St., Dubuque, Iowa . . or for more information check CP 4774 on handy form, pages 2 and 3.

Temperature Controller Designed for Electric and Gas Equipment

Controller handles up to 15 amperes



Infi-trol temperature controller

USES - This stepless input controller is suitable for electric and gas furnaces, ovens, pots and other similar equipment.

FEATURES - On electrically heated equipment, only a small portion of current is allowed through the heating elements, an amount sufficient to maintain definite temperatures. Since no resistance is used, no current

is wasted. Gas equipment is controlled through a solenoid

DESCRIPTION - Model IF 4 weighs 51/4 pounds and is equipped with a pyrometer calibrated to 2000° F. Can be supplied for other temperature ranges.

Where temperature indication is not required, and a pyrometer is already in the installation, the Model IF 2 is furnished. Similar to the IF 4, it is minus the pyrometer and weighs 33/4 pounds.

All models operate on 115 volts AC (220 Volt units on special order). With plug-in arrangements these controllers handle up to 15 amperes, the rated capacity of the plugs. For higher capacities, permanent styles with "knock-outs" are recommended.

SOURCE - Product of K. H. Huppert Company, Dept. CP, 6830 Cottage Grove Ave., Chicago 37, Ill . . . or for more information check CP 4775 on handy form, pages 2 and 3.



How to cut down instrument maintenance

You could cut down maintenance if you kept your instruments under bell jars. Dirt, dust and corrosive atmosphere would be sealed out. Dirty control contacts would be eliminated.

But don't requisition bell jars yet. Essentially, we've built better than bell jars right inside the Brown Electronik Potentiometer. Practically all the moving

parts have been put into electronic vacuum tubes. The important control contacts are mercury switches forever sealed in glass-permanently protected against atmospheric conditions. The few moving parts are rugged and oversized, and all protected by a dust and moisture-resistant instrument case.



Seven years of performance in all industries has proven that the Brown Electronik Potentiometer requires only negligible maintenance. Add this important advantage to its greater accuracy, sensitivity

and speed of response and you will see why the Brown ElectroniK Potentiometer is by far the leader in the field.

For a complete description, write for Catalog 15-9.



THE BROWN INSTRUMENT CO., 4421 WAYNE AVE., PHILADELPHIA 44, PA. DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR CO.

Offices in principal cities of the United States, Canada and throughout the world.



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APRIL, 1948



When inquiring check CP 4777 on handy form, pgs. 2-3

Single Frequency Amplifier Has High Gain

Available in frequencies from 4 to 45 cycles with band-widths from 1 to 5 cycles

USES - For use in servo-mechanism circuits and laboratory experimentation. Ideally suited for work in conjunction with thermocouples, bolometers, strain gauge and other types of bridges.

FEATURES - Parallel T filters employed are of the plug-in type for simplicity and ease a change. Maximum gain is 5 x 107 with an input noise level less than 10-9 volts. Design is such as to make special selection of

A low input impedance of from 10 to 50 ohms permits matching to low impedance bridges. Output of the amplifier may be had as an average rectified D. C. signal suitable to drive a standard 0-1 milliampere recording galvanometer or as A. C. with a maximum undistorted output of 30 volts.

DESCRIPTION - Circuit consists of a high gain input transformer, four stages of amplification, a rectifier, and a cathode follower output tube. A filter is used to eliminate the power frequency and may be removed from the circuit at will; another filter is used as an inverse feedback loop over one of the stages to give a very narrow bandpass. This filter may also be removed to give a broad-band response with a gain of 1/5 x 108.

Amplifier section is separate from the power supply

W. C. DILLON & CO., INC.

5410 W. HARRISON STREET

CHICAGO 44, ILLINOIS



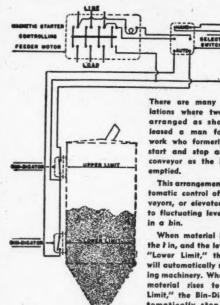
Identifying colors for chemical testing and quality control is easy with the G-E spectrophotometer-eliminates guess work. It has been adopted by the American Standards Association as the basic color-measuring instrument. The spectrophotometer is used continually at Western Regional Research Laboratory in Albany, California for studies in proteins.

You can test both liquids and solids—keep a graphic record of all color comparisons. Use it as a check on all mixing and blending operations. It's easy to use, requires little maintenance. Records are easily interpreted, may be kept indefinitely. Write for Bulletin GEA-3680A. Section 653-24, Apparatus Department, General Electric Co., Schenectady 5, N. Y.

GENERAL ® ELECTRIC

When inquiring check CP 4779 on handy form, pgs. 2-3

2 BIN-DICATORS REPLACE 1 MAN



There are many actual installations where two Bin-Dicators arranged as shown have released a man for productive work who formerly stood by to start and stop an elevator or conveyor as the bin filled and

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This arrangement provides automatic control of feeders, conveyors, or elevators, in response to fluctuating levels of material

When material is drawn from the t in, and the level falls to the "Lower Limit," the Bin-Dicator will automatically start the feeding machinery. When the level of material rises to the "Upper Limit," the Bin-Dicator will automatically stop the feeding

THE BIN-DICATOR COMPANY

14616 E. JEFFERSON

DETROIT 15, MICHIGAN

When inquiring check CP 4780 on handy form, pgs. 2-3

DILLON MULTI-LOW RANGE UNIVERSAL TESTER (Left) Newest addition to the Dillon line of precision test equipment. For critical testing in ounces! Has four scales—0.10 lbs., 0-25 lbs., 0-50 lbs., 0-100 lbs. Pendulum type, accurate to 1/2 of 1%. Furnished with stepless speed motor offering draw-bar travel of from 0" up to 19" per minute. Forward and reverse. Has automatic limiting switches, stress-strain recorder, elongation scale, steel stand—in fact, every desirable testing feature! Can be supplied with standard 12" daylight opening or special tall models with 24", 36", and 48" openings. Tests NAME in tensile, compression, transverse and shear. Engineering specs, and photographs available on request. LOW PRICE HIGH QUALITY! In leading industrial laboratories everywhere, Dillon test equipment stands out pre-eminently! Whether it's physical testing, temperature indication, weight measurement or mechanical pres-Dynamometers and Thermometers served America during the war-proof of their accuracy and high quality. Best of all, Dillon products are not costly. They are well within reach of any average company budget! Why not write today? Dillon engineers will be glad to advise you ir. adapting this precision equipment to your special problems. No obligation! Look To Dillos For

Write for Catalogs

illustrated catalogs and folders are available on any of the above prod-ucts. Simply specify those in which you are interested. Literature will be promptly mailed!

When inquiring check CP 4778 on handy form, pgs. 2-3

Page 42

The Houseal

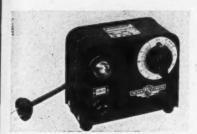
In Procision Tost

CHEMICAL PROCESSING Preview

and is mounted to eliminate vibration pickup. Power supply operates from 115 volts, A. C. Dimensions are 7 x 17 x 12 inches.

SOURCE — Made by W. S. Macdonald & Company, Dept. CP, 33 University Road, Cambridge 38, Mass. . . . or for more information check €P 4781 on handy form, pages 2 and 3.

Percentage Timer Controls Electrical Equipment



Percentrol timer

AN

ors reve to or nd USES — Can be used to regulate the input to electrically heated equipment such as ovens, heaters and baths, or to control the proportionate flow of chemicals such as treatment in boiler feed water.

FEATURES — Automatically controls the percentage of time which any AC circuit will be on or off, out of a definite period of time.

DESCRIPTION — Range of the timer is approximately 5 to 60 seconds. Percentage of time "on" is controlled by turning the reference dial. The "on" segment registers 100% time on.

SOURCE — Developed by Precision Scientific Company, Dept. CP, 3737 W. Cortland St., Chicago 47, Ill., . . . or for more information check CP 4782 on handy form, pages 2 and 3.

Static Pressure Controller Useful for Low Pressure Applications

Standard sizes handle ranges from 0 to 20 inches of water pressure or vacuum

USES — May be used for regulation of liquid level from slight changes in head pressure, to signal in event of excessively high or low pressures, to control the static pressure in the discharge duct of a fan, and other applications.

FEATURES — Installation is simple. Requires only one or two holes to mount on a vertical wall or duct.

DESCRIPTION — Controllers are small in size, and are available in standard sizes ranging from 0 to 20" of water pressure or vacuum with range adjustment, and with fixed differentials from .2 to 2" of water.

Has double throw circuit or floating contacts for use in connection with reversing type damper control motors. Ratings approved by Underwriters' Laboratories for 10 amperes, 125 volts, or 5 amperes, 250 volts, AC.

SOURCE — Made by Coral Designs, Dept. CP, Box 248, Forest Hills, New York . . . or for more information check CP 4783 on handy form, pages 2 and 3.

APRIL, 1948



Askania's exclusive Jet Pipe principle is the heart of the Proportioning Regulator . . . providing a simple, accurate system for mixing two or more liquids or gases to a predetermined ratio.

An outstanding feature is the ease in which the ratio may be changed without disturbing continuity of operation — merely by changing the position of the ratio slider, included as a part of every Askania Proportioning Regulator. It has a turn down range of 10 to 1, with accuracy across the full range. Measures changes in conditions as small as .0025" W. C. Fiberglas diaphragms, impervious to acids and gases, are used in low pressure systems. There are few moving parts, reducing maintenance to a minimum.

The Askania Proportioning Regulator is ideal for the continuous automatic proportioning of two or more liquids, gases, or gases with liquids, such as fuel air mixtures, propane-butane and natural gas mixtures and for processing change from batch to continuous mixing. For complete information ask for Bulletin No. 139.

ASKANIA REGULATOR COMPANY

A SUBSIDIARY OF GENERAL PRECISION EQUIPMENT CORPORATION

240 EAST ONTARIO STREET

CHICAGO 11, ILLINOIS

Controls

SIMULTANEOUS ANALYSIS OF 6 GASES



The Cambridge Recording Gas Analyzer continuously analyzes and records as many as six constituents of a mixture of gases, SIMULTANEOUSLY. It makes possible substantial savings in the operation of kilns, production of inert gases, and in metallurgical, petroleum, and other chemical processes. Single point and multipoint instruments are available for a wide variety of applications.

Send for literature mentioning application.

CAMBRIDGE INSTRUMENT COMPANY Inc.

3706 Grand Central Terminal New York 17, N. Y.

Pioneer Manufacturers of

PRECISION INSTRUMENTS

When inquiring check CP 4785 on handy form, pgs. 2-3

Meter Measures Air Velocities as Low as Five Feet per Minute

Lower balf of scale handles readings from 0 to 200 feet per min., upper half for readings up to 6000 feet per min.



Air velocity meter

USES — Instrument may be used to measure air velocities accurately.

FEATURES — Meter is more accurate than previous models, and also includes an increase in the standard range of the instrument from 2000 feet per minute

to 6000 feet per minute, with no sacrifice in the accuracy of the low velocity measurements.

DESCRIPTION — Lower half of the scale is expanded for accurate reading of velocities from 0 to 200 feet per minute while the upper half is compressed logarithmically for readings up to 6000 feet per minute.

Instrument may be operated directly from a 110 volt AC

outlet or from a portable battery operated power pack. Portable power pack is constructed in a metal carrying case which includes room for the instrument and cable. Incorporates the basic noble-metal thermopile principle. Thermopile, made of precious metals which do not easily contaminate or corrode, is installed in a one-half inch diameter probe which may be plugged directly into the case, placed on an extension wand, or installed at a remote location.

SOURCE — This improved model is made by Hastings Instrument Company, Inc., Dept. CP, P. O. Box 1275, Hampton, Va. . . . or for information check CP 4787 on handy form, pages 2 and 3.

High Speed Photoelectric Control Has Wide Application

Relay operates in 1/20 second and has operating range of 10 feet

USES — Specifically designed for industrial application, and is recommended for counting, conveyor control, automatic paint spraying, break detection, automatic weighing, sorting, gate signals, etc.

FEATURES — High speed, rugged. Tamper-proof sensitivity adjustment is provided on the control housing to permit positive operation over varying distances from control to light source under conditions of ambient light.

DESCRIPTION — Photoelectric control type 20DJ1 has phototube and light source lamp in small dust-tight,

WEIGH MATERIALS <u>AUTOMATICALLY</u> IN TRANSIT ON YOUR PRESENT CONVEYOR SYSTEM

Builders Conveyoflo Meter can now be installed . . . without even cutting a stringer . . . in your present conveyor system! The single-roll weigh span CONVEYOFLO BUILDERS comes as a complete packaged unit - keeps an accurate total of weight **PRODUCTS** METER of material moving on the belt. Instead of the usual knife-edge weigh scale, Venturi, Propeloflo the Conveyoflo Meter utilizes rugged diaphragms - saves space, increases accuracy and permits conveyor weigh section to run up or down hill. Load and Orifice Meters changes are transmitted hydraulically to the totalizer with extreme accu-Type M, Flo-Watch racy over a wide range. The Conveyoflo can be made to maintain any and Flo-Gage Instrudesired feeding rate and may be synchronized with auxiliary equipment for feeding secondary dry materials and liquids to preset ratios. For ments . Shuntflo Bulletin D8-550.35, address Builders-Providence, Inc., (Division of Builders Steam Meters . Ken-Iron Foundry), 47 Codding Street, Providence 1, R. I. nison Nozzles Chronoflo Telemeters BUILDERS PROVIDENCE Conveyoflo Meters Instruments METERING SPANS BUILT INTO EXISTING NVEYOR

When inquiring check CP 4786 on handy form, pgs. 2-3



In Canada: PEACOCK BROS., LTD.

When inquiring check CP 4788 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

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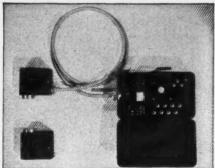
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J1 has tight, die-cast housings, both wired to the control housing. Control is mounted in a deep-drawn sheet steel housing and is designed and tested to give long life under conditions of high temperature and humidity.

Sensitivity adjustment provides for relay operation at any predetermined level of illumination within the



Photoelectric control

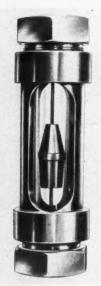
range of 10 to 50 foot candles. Operates on 115 and 230 volts—50/60 cycles.

Relay has double-pole, double-throw contacts which handle $\frac{1}{2}$ H.P. 115/230 volts A. C. 10 A. — 115 V. A. C. 5 A — 230 V. A. C.

SOURCE — Photoswitch Incorporated, Dept. CP, 77 Broadway, Cambridge 42, Mass., is the maker . . . or for more information check CP 4789 on handy form, pages 2 and 3.

Indicator Shows Flows in Pipe Lines

Available for pipe sizes from 1/4 to 1 inch



"Full-View" flow rate indicator

USES — Designed for use in pipe lines where increased accuracy at moderate cost is desired.

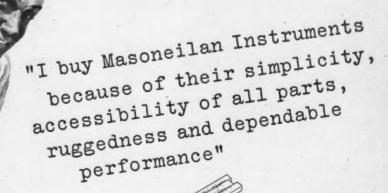
FEATURES—Fits into pipe lines and shows rates of flow, but not a substitute for the rotameter.

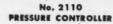
DESCRIPTION — Available in sizes of $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, and 1 inch pipe with respective capacities of 1.0, 3.7, 8.0 and 15 gallons per minute.

Body (not in contact with fluid) is made of bronze. Employs Pyrex tapered tubes. Floats and heads are furnished in brass, steel, or No. 303 stainless. Rods are No. 303 stainless steel and gaskets are neoprene.

SOURCE — This Full-View flow rate indicator is a development of Jacoby-Tarbox Corporation, Dept. CP,

205 E. 42nd St., New York 17, N. Y. . . . or for more information check CP 4790 on handy form, pages 2 and 3.





Proportional type, designed for precise control of pressure. Stable and smooth in operation. Proportional band adjustment throughout entire range without upsetting control.

Ranges 30 inches Hg. vacuum to 3,000 psi.



No. 3110 TEMPERATURE CONTROLLER

Proportional type for exact control of temperatures in petro-chemical processes. Its smooth operation assures accuracy and uniformity under varying conditions. Ranges -100°F to 1100°F in recording and nonrecording types. Throughout the petrochemical industry, engineers state their preference

for Masoneilan Instruments because of the simplicity of operation and accessibility of all parts.

The simplicity of operating elements assures instant, uniform response under practically all types of operating conditions. The accessibility of all parts enables you to observe the working operation of every element.

Masoneilan Instruments, pressure and temperature, are available in indicating and recording types for a wide variety of control applications in the petrochemical industries. Investigate these Masoneilan control instruments for your processes.



MASON-NEILAN REGULATOR COMPANY

1203 Adams Street, Boston 24, Mass., U.S.A.

Philadelphia • Houston • Pittsburgh • New York • Buffalo • Chicago • St. Louis • Cleveland • Tulsa • Atlanta
Los Angeles • San Francisco • Cincinnati • Mason Regulator Company of Canada, Ltd., Montreal and Toronto

When inquiring check CP 4791 on handy form, pgs. 2-3

iew





Temperature indication is provided economically for chemical processing with the Auto-Lite Indicating Thermometer shown above. Dial head can be mounted where temperature observation is most convenient. Other styles and types available.

Write for catalog.

THE ELECTRIC AUTO-LITE COMPANY
INSTRUMENT AND GAUGE DIVISION - TOLEDO 1, OHIO
New York: Chrysler Bidg. • Chicago: 600 S. Michigan Bivd.

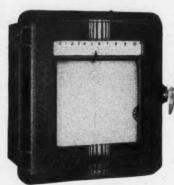


When inquiring check CP 4792 on handy form, pgs. 2-3

Process Instrumentation

Instrument Measures Oxygen Content in Flue Gases

Handles flue gas analyses beyond the scope of CO₂ recorders



Micromax strip chart oxygen recorder

USES — Instrument is a guide to regulating excess air in furnaces such as glass tanks, cement kilns and openhearth furnaces. Also may be used as a means of checking combustion in boiler furnaces which fire several different fuels simultaneously or in succession.

FEATURES — Checks combustion

efficiency for any process where carbon dioxide is evolved by process reactions.

Since all parts which contact gas are made of glass, the equipment is corrosion-proof and stable in calibration.

DESCRIPTION — Oxygen recorder operates on the thermal conductivity principle. Analysis for oxygen is accomplished by the hydrogen-difference method, which consists of adding hydrogen to the gas sample, removing

FLECTRONIC HEAT

CONTROL...

SEND FOR

THIS BOOK

Here's the story of the simplified, moderately priced Alnor Electronic Pyrometer Controller.

This bulletin describes several of the many advantages in automatically controlling or maintaining heat in industrial furnaces, ovens and kilns—in fact, in all heating devices using electricity, gas or oil. The Alnor Controller is made by instrument technicians, is sensitive enough for laboratory use, rugged enough for grueling industrial service. Today, while you are thinking of it, send for Bulletin No. 3197-C. ILLINOIS TESTING LABORATORIES, INC., Room 504, 420 N. La Salle Street, Chicago 10, Illinois.

alnor

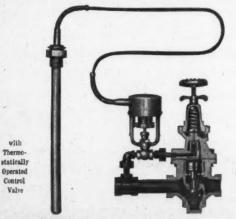
PRECISION INSTRUMENTS
FOR EVERY INDUSTRY

When inquiring check CP 4795 on handy form, pgs. 2-3

KECKLEY

TYPE PTT — COMBINATION
PRESSURE AND TEMPERATURE REGULATOR

is a combined Pressure and Temperature Regulator which not only reduces high initial pressures to any desired reduced pressure but also maintains a definite temperature of the liquid being heated, eliminating the necessity and expense of installing both a Pressure and Temperature Regulator.



Write today for Descriptive Bulletin No. 48.

O. C. KECKLEY COMPANY

400 W. MADISON STREET

CHICAGO 6, ILLINOIS

When inquiring check CP 4793 on handy form, pgs. 2-3

A Scientific Measurement



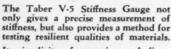
FREE. This illustrated brochure on stiffness and resilience testing. (Also handbook on

wear resistance meas-

urement with the Taber Abraser.) Thin Metallic Sheet, Wire, Plastic Sheet, Paper and Paper Board, and other Flexible Materials

WITH THE

TABER STIFFNESS GAUGE



Its simplicity of operation and direct recordings make it an exceptionally practical instrument for industrial research. Light weight, portable. Motor driven (115 volts).

TABER INSTRUMENT CORP.

TABER V-5 STIFFNESS GRUGE

When inquiring check CP 4794 on handy form, pgs. 2-3



Now, a complete gaging system which eliminates many gaging operations. Eye-level readings at each tank, plus electric dials on master control panel always before your operator's eyes — ready to give readings instantly. Easy to install. High or low pressure. Accurate. Time Saving. Send for Bulletin No. 148.





SMITH METER COMPANY

FACTORY: 5743 SMITHWAY, LOS ANGELES 22. CALIF.

Sales Offices: NEW YORK, CHICAGO, HOUSTON LOS ANGELES. Canadian Representatives: Toronto, Vancouver. International Division: Milwaukee 1, Wisconsin. Local Agents in Principal Cities.

When inquiring check CP 4796 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview



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BROOKFIELD SYNCHRO-LECTRIC VISCOMETER

At last, Point of Process Viscosity readings are not only practical, but simple, rapid, and accurate as well. The Brookfield Viscometer is portable and plugs into any ordinary electrical outlet for connection. Operation is completely automatic and readings are given directly in centipoises.

ONLY A BROOKFIELD HAS ALL THESE ADVANTAGES

- Portable use in lab and plant
- Rapid readings in 30 seconds
- Accurate within 1% of range
- Simple no technical knowledge to operate or to read
- Rugged built to take plant handling without getting out of order.

BROOKFIELD ENGINEERING LABORATORIES, INC.

210 Porter Street, Stoughton, Mass.

When inquiring check CP 4797 on handy form, pgs. 2-3

Process Instrumentation

oxygen by combustion, and electrically comparing the conductivity of the sample before and after oxygen is removed.

Recording instrument can be either of two models . . . for extra visibility of scale, a round chart; for a highly detailed record a strip-chart model.

SOURCE — A development of the Leeds & Northrup Company, Dept. CP, 4934 Stenton Ave., Philadelphia 44, Pa., . . . or for more information check CP 4798 on handy form, pages 2 and 3.

Portable Kit Handles Wide Ranges of Flow Metering Applications

Capacities from 0.065 to 2200 cc/min. of water and 5.0 to 36,800 cc/min. of air are covered



Laboratory kit (rotameter type)

USES — This laboratory kit is designed to fill the need for a versatile flow measurement "set" to meet the varied flow measurement requirement of the research laboratory.

FEATURES

"C-Clamp" meter construction permits easy disassembly for quick metering tube changes. Selection of proper tube and float combinations is simplified.

DESCRIPTION — Consists of a metering tube holder with base plate and hose connectors, four interchangeable tubes and six metering floats complete with calibration data. Capacities from 0.065 to 2200 cc/min. of water and 5.0 to 36,800 cc/min. of air are covered.

SOURCE — Made by Fischer & Porter, Dept. CP, Dept. 9 E-J, Hatboro, Pa., . . . or for more information check CP 4799 on handy form, pages 2 and 3.

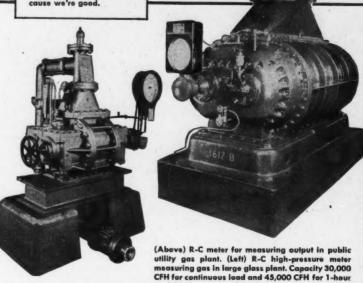
Covers Full Line of Laboratory, Industrial Resistors and Rheostats

A comprehensive line of stock units in resistors and rheostats for industry and laboratory is included in this catalog. Describes ring-type and heavy duty plate-type rheostats, also resistors of the following types: fixed tubular, Adjustohm, Stripohm, placque, non-inductive, Discohm, line voltage reducers, fluorescent lamp resistors.

Dimensional data and basic resistor formulas are presented. Catalog D-30, issued by Radio & Electronic Distributor Division, Ward Leonard Electric Company, Dept. CP, 53 W. Jackson Blvd., Chicago 4, Ill. When inquiring specify CP 4800 on handy form, pages 2 and 3



George M. Pullman's first sleeping car went into service in 1859, five years after the first Roots Blower was built. We're not good because we're old, but old because we're good. Measure
INPUT OR OUTPUT
WITH "CASH REGISTER"



Wherever gas needs to be measured . . . for buying, selling or processing . . . you get unfailing accuracy from R-C Positive Displacement Meters. The reasons are:

- Accuracy is not affected by variations in specific gravity, rate of flow, pulsation, moisture or impurities.
- 2. Accuracy does not depend on uncontrollable factors.
- Accuracy is not subject to adjustment of meter or recorder by operators.
- 4. Accuracy is not affected by reasonable overloads.
- Accuracy is permanent because measuring chambers are surrounded by precision-machined, cast-iron surfaces.

The wide use of R-C Meters by public utilities, producers, industrial users and processors is the best evidence of satisfactory performance. For details, ask for Bulletin 40-B-14 or write us about your specific problem.

ROOTS-CONNERSVILLE BLOWER CORPORATION 804 Richland Avenue, Connersville, Indiana



. . ONE OF THE DRESSER INDUSTRIES .

When inquiring check CP 4801 on handy form, pgs. 2-3

Precise Control of Steam or Air Pressure



No danger of built-up service pressure with a No. 960 Regulator . . . even when attached machines or tools aren't in use. Fluctuations in initial pressure don't affect delivered pressure. Once you set it, the No. 960 delivers a smooth, steady flow . . . operation is completely automatic.

Made for initial pressures up to 250 pounds steam or air. Supplied to deliver reduced pressure in any of four ranges: 1 to 10; 5 to 30; 20 to 100; 90 to 200 pounds. Setting within each range is a simple adjustment. Sizes up to 2 inches.

Simplified design in the finest Crane brass with a minimum of working parts permits easy cleaning and inspection. Every working part is renewable; piston operates in removable cylinder liner.

HOW TO SELECT PROPER SIZE is illustrated in folder AD1607, giving complete specifications. Sent on request . . . or ask your Crane Representative for a copy.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill. Branches and Wholesalers Serving All Industrial Areas



VALVES . FITTINGS . PIPE . PLUMBING AND HEATING

When inquiring check CP 4802 on handy form, pgs. 2-3

Briefs ... from contemporary publications

Here's a quick look at interesting articles appearing in other publications
. . . as selected by Technical Editor, H. McCormack

Maintenance of Stainless Steel Refinery Equipment

Increasing use of various stainless steels in fabricating petroleum equipment is commented on. Properties of various stainless steels for a number of uses are stressed. Analyses and identification numbers are tabulated. This 8 page article points out that refinery services require steels which will function satisfactorily in high and low temperatures. Intergranular corrosion and remedies are suggested. Welding techniques are pointed out. Includes 2 photographs and 2 tables.

Stress corrosion, abrasion and cleaning methods are outlined. Ways in which fabrication may contribute to stress corrosion are cited. (From "Petroleum Processing", January & February, 1948)

Reaction Rate, Heat Transfer and Temperature Distribution in Fixed Bed Catalytic Converters

Article presents fundamental heat-balance equations, and data required for solution. A semi-empirical correlation for estimating the conductivity of granular solids is given.

A method for rapidly analyzing catalytic reactors by means of an electrical network is described. Construction of a typical network is also included. Consists of 11 pages, including 13 figures and 1 page of discussion. (From "Chemical Engineering Progress", February 1948)

Determination of Hydrogen Chloride in the Presence of Chlorine

The mechanism of reactions of chlorine with water, as well as the solubility of chlorine in varying small concentrations of hydrogen chloride in water are discussed in this 2 page article. Cites various methods which have been used to determine hydrogen chloride in presence of chlorine, comments on short-comings and presents methods recommended for accuracy. Illustrated with 1 table and 1 figure. (Fram "Analytical Chemistry", January 1948)

Fluid Drives for Industrial Power Transmission

Five pages including 2 photographs and 6 diagrams point out the construction of the fluid drive and how it operates. Two types are commented on and illustrated. Drive performance under varied service conditions is stated. (From "Southern Power & Industry", February, 1948)

Inhibited Transformer Oil — Its Advantages

Factors which lead to the deterioration of transformer oils in service are discussed in this 5 page article. Accelerated tests for measuring the stability of these oils are considered with criteria of evaluation. One procedure is described in detail.

Increased oil life has been attained by the addition of a

suitable inhibitor to a refined stock. Numerous data from laboratory and full scale tests are presented to demonstrate that greatly improved stability can be achieved without the impairment of other properties essential for transformer use. Includes 8 figures and 2 tables. (From A. S. T. M. Bulletin, December 1947)

Radioactivity in Chemical Process Control

A 3 page article including 2 figures cites how radioactivity may be applied in chemical processing operations as a control element. Discusses hazards and government restrictions on the use of radio-isotopes.

Applications commented on are: monitoring devices for safety, specific gravity measurements, liquid level gauges, and tracers in processing reactions. (From "Chemical Engineering", January 1948)

Lactic Acid — From Fermentation of Sulfite Waste Liquor

Results are presented on experimental work for the production of lactic acid from this new source, in this 10





IN CANADA, S. F. BOWSER, LTD. . 64 FRASER AVE. . TORONTO, ONTARIO

When inquiring check CP 4803 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

page article. Necessary preliminary treatment of waste liquor and conditions for economic fermentation are described. Treatment of the fermented liquor is stated.

Yields and purity of lactic acid are given and the accompanying by-product, acetic acid. Economic aspects of the process are discussed. Includes 11 tables, 8 figures and 4 photographs. (From "Industrial & Engineering Chemistry", January 1948)

Conference Report on Herbicides

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This 3 page article points out recommendations on the uses of certain herbicides, discusses the use of 2, 4-D on specific weeds, use of pre-emergence sprays, use of post-emergence sprays on weeds in crops, and indicated methods of application. States information which should be carried on herbicide labels. (From "Agricultural Chemicals", January 1948)

Vulcanization of Synthetic Rubbers by the Peachey Process

Results of an experimental study of the vulcanization of various synthetic rubbers, subjecting them alternately to sulfur dioxide and hydrogen sulfide gases are presented in this 6 page article. Nine synthetic rubber polymers, 8 of which were vulcanized satisfactorily, were studied. Study was directed to determining the conditions of exposure to the gases for satisfactory results. Synthetic rubbers tested, methods of curing and results of cures are tabulated. Illustrated with 4 tables and 5 figures. (From "Journal of Research, U. S. Bureau of Standards", January 1948)

High Styrene Copolymers in Natural Rubber Compounds

Results which have been attained to improve flexibility and resilience of certain natural rubbers, compounded with high styrene copolymers, are outlined in this 5 page article which includes 7 figures and 9 tables. Compatibility with natural rubber is demonstrated through tabulated data of compositions and their tests.

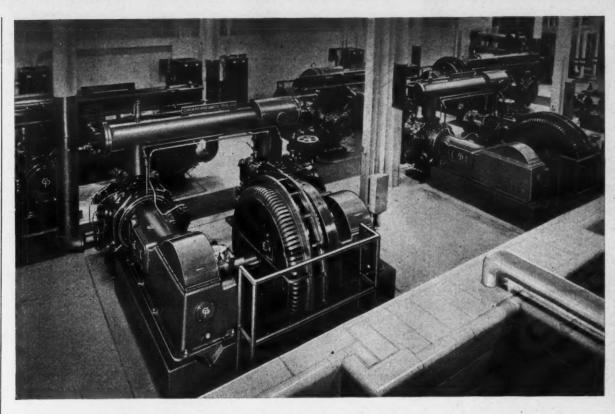
Effects of high sulfur in compounds are pointed out. Hardness, abrasions and flex life are demonstrated by tabulation formulations, press cures and physical properties. Similar data are cited when GR-S is included in the blend. Miscellaneous uses of the compounds, in which high styrene copolymers are present, are commented on. (From "India Rubber World", January, 1948)

Benzol Extraction

This 1½ page article, which includes 8 figures, describes a new process which operates with very low steam consumption. Activated carbon is used as the adsorbing agent and benzol is recovered using an inert gas in place of steam. Consumption figures for the customary process are compared with the new process. Includes flow sheet and operating diagrams. (From "American Gas Journal", January 1948)

Gasoline Antioxidants with Air — Technique for Measuring Reactivity

A description of the equipment and techniques for the measurement of reactivity of gasoline antioxidants with air at room temperature and normal pressure is given in this 1 page article which includes 2 figures. (From "Analytical Chemistry", January 1948)



for continuous heavy-duty and economical operation

Compressors.

Rugged construction, conservative rating, and low power consumption make the CP motor-driven Class O-CE the ideal compressor for the continuous, heavyduty job.

- Quick-acting Simplate valves minimize power consumption, and provide high volumetric efficiency.
- Large, streamlined air passages make air flow resistance negligible.
- CP Multi-step Control handles partial load demands with maximum economy.
- CP Intercooler assures maximum heat transfer with low water consumption.
- CP Automatic Starting Unloader completely unloads compressor when starting and stopping.

The CP Class O-CE Compressor is of the horizontal, double-acting, water-cooled type, with direct-mounted synchronous motor drive. Furnished in sizes up to 1,500 h.p., for pressures up to 5,000 pounds. Write for full information.



AIR COMPRESSORS • ELECTRIC TOOLS • PNEUMATIC TOOLS • DIESEL ENGINES ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

When inquiring check CP 4804 on handy form, pgs. 2-3



The diaphragm in this unusual valve design serves a double purpose. First, it acts as a gasket to isolate bonnet and working parts from the flow, eliminating troublesome stem packing, preventing corrosion of working parts and contamination of materials being handled. Second, as the closing medium, it provides a resilient, unfailing, leakproof closure, even when scale or other foreign matter settles on the seat. Maintenance consists only of occasional change of diaphragm. No need to remove valve body from line.

WIRE DRAWING

Write for Bulletin V-47 detailing all the benefits of this radically different, proved-in-service valve design. Wide choice of body and diaphragm materials available to meet your requirements. HILLS-McCANNA CO., 2370 W. Nelson St., Chicago 18.

For pressures to 150 Psi. Max. recommended temperatures standard valves 180° F.; others to 220° F. Sizes 36" to 14" both screwed and flange. Handwheel and lever operated types; air, motor or chain operated.



Saunders patent

diaphragm

valves

HILLS-MCCANNA diaphragm valves saunders patent

When inquiring check CP 4805 on handy form, pgs. 2-3

Coating Especially Suitable for Use on Walls of Dry Booths

Brushed or sprayed; involves no fire or health hazards

A light-colored, semi-liquid material provides an easily applied coating for paint spray booths. It is especially advantageous for use on walls of dry booths. For spraying, a 20% dilution (4 parts of the compound "Triad" PRD to one part water) produces a viscosity that can be handled in a pressure tank. This material can be brushed on as it comes, although a 10% dilution with water usually provides a better consistency. A continuous white coating is formed to which paint overspray adheres.

When necessary to clean-up booths, the coating with adherent paint film is readily scraped off without previous soaking, or it can be easily removed by flushing with either hot or cold water. Paint overspray adhering in a solid film can be peeled off in a sheet. There is no fire or health hazard in the application of this material. (Detrex Corp., Box 501, Detroit, Mich.)

Vulcanizer Quickly Replaces Broken Cable Sections

Especially suitable for use with companion splicing unit

A new type of vulcanizer provides an easy and inexpensive means of replacing insulation on all types of rubber-covered flexible cables. It makes broken or damaged cables as good as new. It is used to advantage with a velocity-power cable splicer, also produced by this same maker, and permits a neat, compact re-placement of the insulating jacket comparable to the

In operation, pressure is applied to the molds by three threaded studs, while heat from highly efficient electrical resistance units is conveyed to the molds by automatically controlled steam pressure.

Prior to the vulcanizing operation, the broken section of cable should be joined with a short, smooth splice of the type produced with the power-velocity cable splicer. Gray insulating tape is then wound around the spliced section to a diameter slightly larger than that of the original cable insulation. In the case of multiple conductor cables, the conductors are grouped in proper relation and any voids are filled with strips of rubber compound. The entire assembly is then wound around with black vulcanizing tape to a diameter slightly larger than the mold cavity. The spliced section thus prepared is then placed in a pre-heated mold and pressure is applied. The curing process requires only a few minutes and the completed joint closely approaches the original cable in both appearance and

The cable vulcanizers are available in five models for accommodating cables with jacketed diameters up to and including four inches. Each model can be equipped with several different sizes and types of molds to accommodate various kinds of repair and splicing operations. Molds are made of aluminum to give maximum heat conductivity and to permit easy removal of the hot rubber cable after completion of the vulcanizing process. (Mine Safety Appliances Co., Pittsburgh 8, Pa.)

New Labs Built, Equipped to Meet Emergencies and Protect Workers

Non-slip floors, exhaust hoods, emergency showers, extra exits among features

New laboratory buildings of General Mills incorporate many safety features. Constructed of brick and tile, the entire laboratory plant is divided into ten fire control units, separated by fire proof doors. In laboratories where the fire hazard is considered great, the walls have been paneled with fire resistant transite.

The new buildings have reinforced concrete floors, either covered with asphalt tile or left with a rough non-slip finish. Although tiled areas have a protective wax coating, eight waxes were tested before one was found which produced a secure footing.

Ordinary single strength glass, rather than reinforced glass panes or glass brick, is used in all outside windows Thus, each window serves as an automatic vent and will blow out and release internal pressure in case of ex-

Outstanding Vacuum Performance of

BEACH-RUSS ROTARY PISTON PUMPS

RESULTS FROM

 Positive rotary motion at only 200 R.P.M. to produce the high vacuum needed, without depending on gears, springs or centrifugal force. High speed evacuation due to high mechanical efficiency of vacuum seal and thorough automatic lubrication system. Ability to handle safely air or gases mixed with water or chemical vapors.

Type RP Pumps capacity range — from 17 to 845 c.f.m. Vacuum - within 10 microns absolute - blank



Write for New Catalog No. 84

BEACH-RUSS CO., 46 CHURCH ST., NEW YORK 7, N.Y.

When inquiring check CP 4806 on handy form, pgs. 2-3

plosion. For the safety of personnel, each floor has exits on two or more opposite sides of the building.

Solvents are stored in a poured concrete vault, located at the basement level in a newly-constructed chemical pilot plant building. Equipped with a carbon dioxide flooding system which automatically goes into action when the temperature rises rapidly, the vault is fitted with explosion-proof lights and a forced air ventilating system. A similar vault has also been provided for storing denatured alcohol.

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Most exhaust hoods, used to carry off the gaseous products of chemical reactions, are constructed of metal and transite, some having wire-reinforced glass doors and explosion ports at both ends. Each hood has a separate exhaust system to eliminate the danger of highly reactive chemicals meeting in the exhaust line.

Emergency showers have been installed at strategic spots, just outside the doors of chemical laboratories. Should a chemist be spattered with strong acid or caustic, he need only step through the door and pull a chain to cover himself with water. In addition, recommended safety devices, such as sheet metal covers for high vacuum distillation flasks, safety shields, and glass enclosed heating elements, are standard equipment in chemical work areas.

Fire protection, besides being a prime mover in design of the laboratories, has called forth its own safety plan. Laboratory employees who hear an explosion or see a fire have been instructed to pick up the nearest extinguisher and place it conveniently near the scene of the accident. Since every laboratory has at least one extinguisher, this plan assures an adequate supply of fire fighting fluid where it is needed most. Gas masks are also in "ready" condition for use in gas-producing fire areas. The entire laboratory is wired with an alarm system.

Heart of this highly organized safety program is a nine man group, headed by the safety director and including representatives from each floor of all laboratory buildings, from pilot plant areas and from building maintenance crew. (Summarized from Progress thru Research—Vol. 2—No. 2—General Mills, Minneapolis, Minn.)

Tabulates Rapid Method for Determining Economical Pipe Insulation Thicknesses

A rapid, more accurate method for determining economical thicknesses of pipe insulation is set forth in a 4-page paper, reprinted from the October, 1947, Journal Section of Heating, Piping & Air Conditioning, published by American Society of Heating and Ventilating Engineers.

Variants such as hours of operation, rate of amortization and cost of heat, are taken in consideration because of todays' higher costs of fuel, labor, etc. In the past, the paper points out, these variants were disregarded by tables based on pipe size and temperature range alone.

While tables and calculations in the paper are concerned with 85% magnesia insulation, author Utley W. Smith, manager, The Magnesia Insulation Manufacturers Association, states that the same formula can be used for determining economical thicknesses of other insulation. Single reprints are available on request. "A Rapid Method of Determining the Economical Thickness of Pipe Insulation," issued by The Magnesia Insulation Manufacturers Association, Dept. CP, 1317 F. St. N. W., Washington 4, D. C. When inquiring specify CP 4807 on handy form, pages 2 and 3.



HOW THE MARX SAVEALL WORKS

As shown in the diagram at the right, the Marx Saveall consists primarily of two large steel plate cones, one mounted inside the other. The inner cone has a large opening at the bottom.

There is a small cone-shaped receiving well at the top and an inverted de-aeration cone directly under the receiving well. Waste white water from the paper board machines is fed into the receiving well at the top, overflows onto the de-aeration cone and over its outer edge into the center of the filter. The suspended solids settle through the bottom of the inside cone, collect in the bottom of the outside cone and are drawn off and fed into a continuous beater for re-use. The water, minus most of the solids, rises between the two cones and overflows into a weir at the top of the outer cone. From there it is piped to storage tanks for re-use in the beater room or it is

HORTON
STEEL STORAGE TANKS
durigaed fabilitated enected
for the chemical
and atoress industries

discharged into a nearby stream.

HOW TO REMOVE

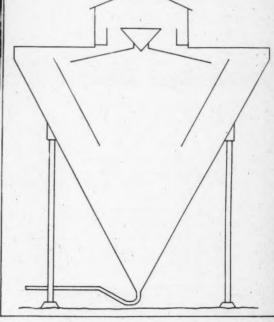
97.4%

OF FIBROUS SOLIDS FROM WASTE WHITE WATER

The Marx Saveall shown at the left was recently erected at a paper boxboard mill to clarify the white water effluent from the paper machines prior to its re-use or discharge. A recent report shows that this Saveall is 97.4% effective reducing suspended fibrous solids in the waste water from 4.66 lbs. per 1,000 gals. to 0.10 lbs.

The clarification process in a Marx Saveall is accomplished by settling. The diagrammatic sketch below shows the construction details of the Saveall.

Marx Savealls are typical examples of the special steel plate structures we build for chemical and process plants. Let our engineers work with you on your next steel plate work requirements.



CHICAGO BRIDGE & IRON COMPANY

ATLANTA 3 ... Healey Bidg.
BIRMINGHAM 1 ... North Fiftieth St.
CHICAGO 4 ... McCermick Bidg.
CLEYELAND 15 ... Guildhail Bidg.
DETROIT 26 ... Lafeyette Bidg.
HAVANA ... 402 Abreu Bidg.

Plants at: BIRMINGHAM, CHICAGO, SALT LAKE CITY, and GREENVILLE, PA.

When inquiring check CP 4808 on handy form, pgs. 2-3



THE combination of improved synthetic resins plus the *upward* flow of the water through the resin beds result in much greater efficiency of operation and higher purity of effluent. UPFLO operation also eliminates completely the need for "backwashing" resin columns — thus valve operations are reduced to a minimum and regenerating time cut nearly in half.

Package Unit

Just Connect to Water and Waste to Operate

Ease of installation is another outstanding feature of these compact units. Comes completely assembled with everything in place — even the resins in columns. All valves, inter-connecting piping and built-in regenerating tanks are included. Cabinet is of handsome stainless steel and has console type control panels. Send for Bulletin 117 for full details.



READY FOR IMMEDIATE DELIVERY



First in Pure Water since 1878

66 Lanesville Terrace Forest Hills, Boston 31, Mass.

When inquiring check CP 4809 on handy form, pgs. 2-3

Carboys Washed, Dried, Refilled, Labeled by Continuous System

Hoods cover container openings, fans carry off fumes when dangerous materials are involved



Carboy in rack is washed with water under high pressure, rinsed, dried with air blast A speed-up in the continuous cycle of washing, cleaning and refurbishing carboys and drums for re-use is achieved with new assembly-line installations at the Heyden Chemical Corporation plant at Fords, N. J.

The returned containers are delivered at one building where a preliminary inspection eliminates chipped or cracked carboys, broken or loose carboy containers, or defective drums. These

are set aside for repair or replacement.

The remainder are placed on special racks where, in a single step, they are washed by water under high pressure, rinsed and then dried with an air blast. Carboys are next further inspected under strong light before being corked and stored for use.

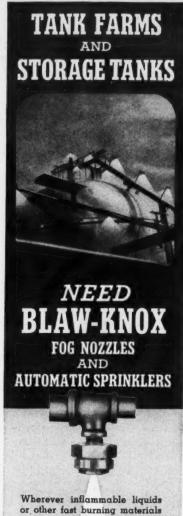
The filling operation is conducted at special stations where scales and outlet valves are in juxtaposition to permit filling and weighing in one operation. If odorous or lacrymating chemicals are being handled, a hood can be pulled down over the container opening and a suction fan carries off the fumes.

All containers receive frequent coats of paint to keep them looking new and each, in addition to a standard content label, is marked with an identifying color band familiar to both producer and consumer. Before shipment, all containers must have one additional label, a red-bordered sticker certifying that the laboratory has tested the batch from which the container was filled and found that it meets the company's high standards.

British Process Extracts Ester Wax from Lignite and Peat

Lignite yields 5% crude wax with melting point of 80° C; peat wax melting point 65°

Extraction of ester wax from lignite (fossil wood) is one of the developments of Britain's post-war program to obtain the maximum from its resources. Before the war, these ester waxes were obtained from the continent of Europe for use in floor, furniture, auto polishes, carbon paper, cosmetics, etc. In searching for a substitute



Wherever inflammable liquids or other fast burning materials must be stored or handled in quantity, instantaneous and reliable fire protection is a "must."

Blaw-Knox Fog Nozzles have wide passages without screens—are non-clogging—always instantly available.

Blaw-Knox Automatic Sprinklers and Deluge Systems strike back at fire with the speed of lightning.

Write for Bulletin No. 2207



Listed by Underwriters' Laboratories, Inc. Approved by Factory Mutual Laboratories.

Blaw-Knox offers Standard Wet and Dry Pipe Systems, as well as Thermostatically Controlled Deluge Systems.

BLAW-KNOX SPRINKLER DIVISION

of blaw-knox construction company 829 Beaver Ave., N.S. Pittsburgh 12, Pa.

Offices in Principal Cities

When inquiring check CP 4810 on handy form, pgs. 2-3



LAMSON CONVEYORS

SAVE wasted effort...handling time ... and floor space.

SPEED flow of materials for greater production.

- It's a fact. Materials-handling costs actually eat up to 30% of your manufacturing dollar. And — there's nothing to show for it in your finished product.
- That—for management—is a tough headache.
- But this is also an incontrovertible fact. Lamson Conveyors have drastically cut materials-handling costs in thousands of plants. (The Westinghouse Plant above is only one.) They can do the same for you.

For Greater Savings— LAMSON Pneumatic Tubes

 Coordinate flow of papers with the flow of materials on Lamson Conveyors. Save costly messenger service... speed flow of mail, telegrams, requisitions, small tools, samples, and blueprints.

In One Plant Alone LAMSON TUBES Saved \$150,000 in one year

The ALLEN-BILLMYRE DIVISION of Lamson Corporation supplies single and multistage blowers and exhausters for all industrial uses. ½ to 200 HP; ¼ to 8 lbs. Pressure, 25 to 15,000 C.F.M.



When inquiring check CP 4811 on handy form, pgs. 2-3

Ideas

during the wartime shortage, the only indigenous natural sources were found to be in peat and lignite.

Although research concentrated more on the latter, its direction towards peat is likely to be important in future because of easier availability. Apart from this, the utilization of wax in industry might have a beneficial effect on production of peat as a fuel for a district into which it is at present necessary to import coal.

The scientific work was directed in the first place to the extraction of ester waxes from lignite beds in southwest England. These beds form a relatively small part of a series of clays and sands in which they are intercalated. This lignite has never been fully utilized as a fuel. Hitherto, it had been used only for generating steam in the neighboring pottery works. Scientists interested in extracting wax from them had, therefore, a number of tips of rejected material from which to take their first samples.

Examination of these led to more extensive investigation, particularly with a view to finding the more extensive seams. This led to mining of lignite and extraction of the wax on a commercial scale.

The nature and amount of wax recovered depends on the type of solvent used for extraction. The yield increases with the following solvents in the following order. The most effective is light petroleum and the others, each somewhat less effective, are benzene nad its homologues, alcohols and benzene ethyl alcohol azeotrope. Of these, benzene was chosen as the extraction solvent during most of the laboratory work, because it led to the production of wax similar in properties to montan wax, already familiar to industry. Also to be considered is the advantage of using a single solvent which does not mix with water.

This lignite operation from its richest source yields 5% crude wax which, when extracted in this manner, is a dark brown brittle solid with a melting point of about 80 degrees C. Peat has been found to yield from 3 to 12 per cent of crude wax as a result of benzene extraction. The peat wax is similar to that produced from lignite, but it is more readily fractured and has a lower melting point. (65-70 degrees C.)

Peat, of course, is more easily available than lignite and commercial extraction of wax from it may well follow the present operations with lignite.

(Summarized from report of British Information Service, 30 Rockefeller Plaza, New York 20, N. Y.)

New pH Standard is More Stable

Potassium Hydrogen Tartrate, Recrystallized, superior to potassium hydrogen phthalate

Potassium Hydrogen Tartrate, Recrystallized, is now available for standardizing pH instruments as recommended by James J. Lingane, of Harvard University, in Anal. Chem., Oct., 1947.

Potassium Hydrogen Tartrate is more stable than potassium hydrogen phthalate, is affected less by dilution, and has greater buffering capacity.

The exact pH value (approximately 3.57), when a saturated solution is made from the salt, is stated on the label. (Eimer and Amend, 635 Greenwich St., New York, N. Y., or Fisher Scientific, 2109 Locust St., St. Louis, Mo.)



Newark Wire Cloth

336 VERONA AVENUE

NEWARK 4, NEW JERSEY

When inquiring check CP 4812 on handy form, pgs. 2-3



For more production ... better morale ... install Swartwout Ject-O-Valve

This modern powered roof ventilator forces out masses of heat, smoke and fumes from foundry, glass plant, forge shop and other work rooms, clears the atmosphere for greater comfort and more efficient operations. Ject-O-Valve eliminates aircontaminating elements before they spread—blasts them straight up into the outer air and draws fresh air from outer walls where it enters. Force from the powerful propeller fan holds pivoted top open, keeps out weather. Top closes tight—weather-proof—when motor stops.

Carefully engineered in five sizes; varying motor-fan ratings to give you a selection of 28 different capacities. Hinged top permits easy access for servicing.

Swartwout AIRMOVER for "open roof" ventilation

For situations where ventilation is general, requiring removal of unwanted elements over a wide area, the gravity type AIRMOVER practically opensy our roofs to the sky . . . with full weather-protection but



minimum air-flow resistance. Write for Bulletin 324.

The Swartwout Company
18539 EUCLID AVENUE . CLEVELAND 12, OHIO



When inquiring check CP 4813 on handy form, pgs. 2-3

New Literature

8" Attrition Mill Grinds Fine or Coarse; Cracks, Shreds, Fluffs or Granulates

Illustrated leaflet describes 8" attrition mill for fine or coarse grinding, cracking, granulating, shredding or fluffing services. High-speed, single-revolving disc type, 3 to 20 hp input. Mill case can be water-jacketed if desired. Available with a variety of plates and discs, also special feeders.

Applications include metals, wood, minerals, nutshells, grains, seeds, etc. Grinding adjustment is by means of hand wheel with graduated dial. Brief specifications are given. Model No. 148-1B-C, 8", as described in bulletin S-2, issued by The Bauer Bros. Company, Dept. CP, 1728 Sheridan Ave., Springfield, O. When inquiring specify CP 4814 on handy form, pages 2 and 3.

Rotameters Handle Corrosive, Sanitary or Severe High-pressure Conditions

36-page bulletin covers rotameters, specific gravity indicators and flow indicators for various services. Types of rotameters presented include those for corrosive, sanitary, or severe high pressure use, also electronic rotameters which measure and continuously record rate of flow. There are drawings, photographs.

A complete section describes operating methods of this rotameter line. Mathematical formula is given. Tables permit easy selection of correct rotameter for specific fluid or gas applications. Bulletin 18-R, issued by Schutte and Koerting Company, Dept. CP, 12th & Thompson Sts., Philadelphia 22, Pa. When inquiring specify CP 4815 on handy form, pages 2 and 3.

Perfume Raw Materials Indexed in 76-Page Catalog; New Specialties Announced

"A Symphony in Fragrance" is the title of new catalog which lists many perfume raw materials. Five sections describe aromatics, specialties, compositions, extraction products (essential oils and resins), and cosmetic and pharmaceutical materials. Information on odor and use of each product is given.

Listing and description of almost 200 perfume oils or compositions specifically blended for various types of cosmetic products is presented to aid the cosmetic manufacturer in perfuming many products. Catalog No. 11.

Issued by Givaudan-Delawanna, Inc. Dept. CP, 330 West 42nd Street, New York 18, New York. When inquiring specify CP 4816 on handy form, pages 2 and 3.

Lecithin Uses and Preparation are Subject of 4-Page Bulletin

Controlled production using select soybeans gives a high grade lecithin having uniformity, stability and excellent quality in the finished product. Bulletin, "Centrol Lecithin," tells what lecithin is, lists properties and describes uses as colloidal and emulsifying agent, wetting and dispersing agent and anti-oxidant.

Lecithin is effective for these applications due to the dual nature of the molecule; one part has an affinity toward water and the other for fats and oils. Films are formed around dissimilar molecules and a strong leci-

thin bond results. The film acts as a sort of oxygen filter in the case of anti-oxidant applications.

Issued by Central Soya Company, Inc., Products Division, Dept. CP, Fort Wayne, Ind. When inquiring, specify CP 4817 on handy form, pages 2 and 3.

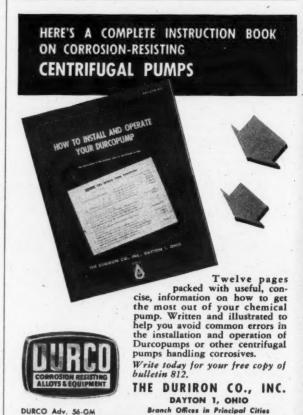
Heat Transfer Problems Solved by Fin-tube Condensers, Heaters, Coolers, Exchangers

A wide variety of finned-tube heat transfer apparatus is shown and described in this 24-page bulletin. Introduction tells purposes of fin-type elements, and services to which they are adapted, as in the case of two fluids of unequal heat transfer rates. Applications of elements with helical K-fins and longitudinal G-fins are indicated. Advantages over bare tubes for many types of duties are explained.

Condensers, heaters, coolers and heat exchangers equipped with either G or K-fin elements are shown and diagrammed. In each case, applications and advantages are pointed out. Bulletin 1626, issued by The Griscom-Russell Company, Dept. CP, 285 Madison Ave., New York 17, N. Y. When inquiring specify CP 4818 on handy form, pages 2 and 3.

Infra-red Lamps Simplify Drying Problems

"Drying Problems Made Easy" is an 8-page brochure on industrial infra-red lamps. With illustrations and dia-



When inquiring check CP 4819 on handy form, pgs. 2-3

Issued by North American Electric Lamp Company, Dept. CP, 1055 Tyler St., St. Louis 6, Mo. When inquiring specify CP 4820 on handy form, pages 2 and 3.

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Dust-tight Flight Conveyor Elevates, Feeds Bulk-flowables in Continuous Mass

Dust-tight flight conveyors which handle flowing bulk materials in a continuous mass are fully described in a 48-page reference booklet. Combining the features of feeder, conveyor and elevator in one compact unit, they are shown to be adaptable to a great variety of bulk flowable granular, crushed, ground or pulverized materials of a non-abrasive, non-corrosive nature.

Literature contains much engineering data, useful charts, tables and formulas to determine size and proper operating speed for a given handling capacity and weight of material to be handled. Units handling 13 different materials are shown. These are said to be self-feeding, self-discharging and largely self-clearing. Book 2175, issued by Link-Belt Company, Dept. CP, 2410 W. 18th St., Chicago 8, Ill. When inquiring specify CP 4821 on handy form, pages 2 and 3.

Complete Bolt, Nut, Washer, Rivet Information Given in Catalog

Well indexed, 90 page catalog gives complete information on all types of carriage, machine, lag, plow, cultivator, guard and spring bolts, elevator, blank and stud bolts, cap screws, various stove bolts, washers and rivets and hot and cold pressed nuts of all types, etc.

Considerable valuable engineering information and such tables as wire, washer and screw gauges, decimal equivalents, pitch diameters, ASME threads, micrometer reading of various threads, decimal equivalents of millimeters, tables of weights of flat rolled strips or sheets, square rolled bars and relation between hardness and tensile strength of SAE steel are given. Catalog No. 47. Issued by the Clark Brothers Bolt Company, Dept. CP, Mildale 1, Conn. When inquiring specify CP 4822 on handy form, pages 2 and 3.

Multi-stage Centrifugal Pump Handles Low Capacities, High Pressures

A split case multi-stage centrifugal pump for low capacity and high pressure pumping is graphically portrayed in an 8-page, 2-color bulletin. Smaller and more economical than manufacturer's "Hydropress" model, it is said to offer certain advantages over the complex displacement-type pump. These include uniform non-pulsating flow, variable capacities without bypass or speed change, no relief valves, vertical construction requiring simple foundation and minimum floor space.

Installation photographs, cross-section schematic, sub-assemblies, parts and dimensional orthographic drawings are presented. Unit has direct-connected electric motor, head range of 450 to 1700', operating speed of 3550 rpm at 60 cycles and 2950 at 50 cycles. "Hydroplex" pump, Bulletin 47-8020, issued by Byron Jackson Company, Pump Division, Dept. CP, Los Angeles 54, Calif. When inquiring specify CP 4823 on handy form, pages 2 and 3.

Advertisement



ISSUED PERIODICALLY BY R-S PRODUCTS CORPORATION, PHILADELPHIA 44, PA., FOR THOSE CONCERNED WITH FLOW CONTROL AND SHUT-OFF

R-S Valves Help to Raise Republic Pig-Iron Output

Drawing herewith shows section of a new installation in the Republic Steel plant at Buffalo. A 12-inch R-S Valve acts as an air-blast relief to protect the turbo-blower from excessive pressures.

This is a 125-pound R-S Valve with 125-pound American Standard flanges. Body and vane are made of R-S "H" metal for resistance to temperatures of 250° to 350° F. The valve is opened and closed by a diaphragm top which in turn is actuated by a pressure controller adjusted to open the valve at 40 p.s.i. and close it when pressure drops below 39 p.s.i.

The importance of the installation is shown by the following quotation from a recent issue of the Buffalo, New York, EVENING NEWS:

REPUBLIC STEEL SPENDS MILLION ON BLOWER TO RAISE PIG-IRON OUTPUT

The Republic Steel Corporation's Buffalo plant is spending approximately

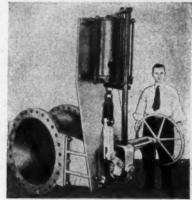
\$1,000,000 to increase production of much-needed pig iron by installing a high-pressure blowing system in one of its two blast furnaces, Manager Frank C. Farrell announced today.

"The high-pressure blowing system will increase the output of the 900 ton-a-day furnace by about 20%," Mr. Farrell said. "Over-all iron production in the plant, "he said, "will rise to about 1800 tons a day when the installation is completed in March from about 1650 tons at present." "About two tons of steel can be made from one ton of pig iron, when the latter is used with scrap, so the expansion of our iron production will enable us to produce about 300 tons more of steel per day."

Foundations for installations in the high pressure (air) blowing system are under construction. New equipment will include a powerful turbine, which will increase the amount of air blown into the furnace from 60,000 cubic feet a minute to 90,000 cubic feet a minute.

Big R-S Valve Controls Water Level in Reservoir

Picture shows an R-S 30-inch 125-pound cast iron valve of Type 501 for control of water level in a reservoir. 8" x 10" air cylinder positioner uses 100 p.s.i. operating air in connection with 0 to 15 pounds instrument air and positions valve accurately through operation of a liquid level controller.



R-S heavy duty handwheel with selflocking worm and gear and de-clutching mechanism provides for manual operation. Gooseneck at right provides additional outboard bearing on operating shaft.

Leveltronic Control Catalog

The Electronic Division of R-S Products Corporation announces its new Catalog #27 on its Leveltronic Relay for control of liquid level, interface, pressure, flow, temperature, high foam, and many other applications.

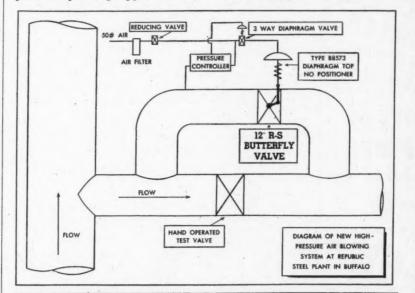
The New R-S Valve Catalog #47

R-S Valve Catalog #47 is packed with information for engineers. There are over 70 halftone pictures of R-S Valves ... working drawings; of 21 types of R-S Valves with standard controls and fittings and complete dimensional data for all sizes ... working drawings of 22 types of

prime movers . numerous other diagrams, graphs, and miscellaneous drawings. Address R-S Products Corporation, Valve Division, Philadelphia 44, Pennsylvania.

JMLGO F-COS





R-S Rubber Seated Valve Takes Terrific Beating

"Doc" Crane, R-S representative at Buffalo, recently arranged a test of an R-S rubber-seated valve for Electro Metallurgical Company, Division of Union Carbide & Carbon. The test involved upwards of 30,000 full closings. The R-S

rubber-seat took the beating, as reported by Mr. C. G. Chadwick of Electro-Met, and we gratefully took the order.

The R-S rubber-seated valve for droptight closure is fully described on Page 40 of the new R-S Valve Catalog #47.

When inquiring check CP 4824 on handy form, pgs. 2-3

2-3

On the PUMP for those CORROSIVE ABRASIVE VISCOUS THICK HEAVY



Learn about the pump with the mechanism that cannot be worn by the fluid handled; that has no packings — no leakage; that is easy to maintain. Get Bulletin 126.

> T. SHRIVER & CO., INC., 846 Hamilton Street, Harrison, N. J.

river DIAPHRAGM PUMPS

When inquiring check CP 4825 on handy form, pgs. 2-3



BRIGHTON COMPANY COMPANY ADDRESS When inquiring check CP 4826 on handy form, pgs. 2-3

New Literature

Shows Heating Jackets, Accessories for all Types of Laboratory Applications

Laboratory heating jackets and accessories, pyrometers and transformers, are included in a 16-page bulletin, with photographs. One close-up photo shown actual size of elements, and manner in which the insulated resistance wire is brought in close contact with vessels, thus saving time ordinarily required for heat to penetrate through layers of insulating material.

A complete line of stock sizes for every laboratory application is covered, including spherical, hemispherical, tubular; jacket tops with of without elements, jackets for Buchner and 60° funnels, Griffin beakers, Pyrex Brand jars and bottles, Kjeldahl and Erlenmeyer flasks, dessicators, etc. Pyrometers, variable transformers, and a combination pyrometer-transformer are shown, also clamps, cradle supports, etc. Bulletin G-101, issued by Scientific Glass Apparatus Company, Inc., Dept. CP, 49 Ackerman St., Bloomfield, N. J. When inquiring specify CP 4827 on handy form, pages 2 and 3.

Freight Elevators withstand Speed, Impact of Loaded 8000-lb. Fork Trucks

Freight elevators designed for carrying power-driven fork trucks and other materials handling equipment are the subject of an 8-page descriptive folder. This literature points out that freight elevators must be especially designed to withstand the speed and impact of heavy pay loads where the truck alone may weigh 8,000 lbs. or more, as contrasted to gradual and distributed freight-elevator loadings possible with hand trucks.

Design features such as reinforced platform frames, diagonal bracing, special flooring, car frame construction, full automatic elevator control and automatic micro self-leveling are diagramed and described in detail. Requirements for hoistway structures in industrial buildings are discussed. "Standard Pow-R-Truck Elevators," issued by Otis Elevator Company, Dept. CP, 260 Eleventh Ave., New York 1, N. Y. When inquiring specify CP 4828 on handy form, pages 2 and 3.

Pumps for Pulp, Transfer, Sump and Heavy Duty are Bronze, Stainless

Food processing pumps of bronze and stainless steel are described in an 8-page brochure. Fully illustrated. Literature covers pulp, transfer, sump, heavy-duty and other types, including specifications, heads handled, and special features. Construction and component parts are clearly shown. Bulletin 201.

Issued by Valley Foundry & Machine Works, Inc., Dept. CP, Dept. F, Fresno 18, Calif. When inquiring specify CP 4829 on handy form, pages 2 and 3.

"HCF" Tube Measures Opaque Liquids, **Increases Rotameter Capacity**

"HCF" rotameter tube for measuring opaque fluids, increasing actual rotameter capacity and for using rotors of special design are illustrated, described, in a 2-page

Literature tells how design of tube stabilizes and shows location of rotor even when measuring opaque fluids. Sizes and capacities are given. Bulletin 18-R, Supple-



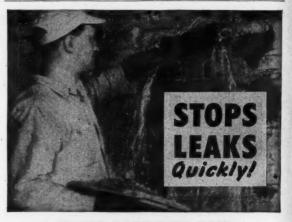
Specialized engineering and precision construction have only one purpose here . . . to give you exact control of spray pattern, distribution, and atomization . . . as well as impact where required, for any given liquid volume and pressure. For your requirements, you will find that Spraying Systems Spray Nozzles can always give you more in performance . , . to improve operations and lower cost. Catalog 22 gives you all the facts.

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4037 W. LAKE STREET . CHICAGO 24. ILLINOIS



When inquiring check CP 4830 on handy form, pgs. 2-3



MAKES BASEMENTS DRY!

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Leaks in concrete wells can be stopped quickly with FLEXTITE. Actually seals against water pressure. Converts wet basements inte dry useful space. Efficient as a plaster coat for sealing off water and dampness. Used in elevator pils, tunnels, dams, tanks, retaining walls. In reconstruction work, broken pillars and beams can be quickly reshaped, with FLEXTITE.

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Please send me complete FLEXTITE information and details of
TRIAL ORDER PLAN — no obligation.

Company Address

When inquiring check CP 4831 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

pat-

your

ment 3. Issued by Schutte and Koerting Company, Dept. CP, 12th and Thompson St., Philadelphia 22, Pa. When inquiring specify CP 4832 on handy form, pages 2 and 3.

Manufacturer Catalogs Complete Line of Valves for Hydraulics, Fluid-handling

Comprehensive 52-page catalog describes valves for industrial hydraulics and fluid-handling. Lists engineering, specification and application data, with illustra-tions, for all types of globe, needle, check, relief and plug valves of this manufacturer.

An additional section treats other specialized valves and accessories for power application and instrumenta-tion. Catalog 301, issued by The Parker Appliance Company, Dept. CP, 17325 Euclid Ave., Cleveland 12, O. When inquiring specify CP 4833 on handy form, pages 2 and 3.

File-size Selector-chart Shows Correct Steam Trap for Specific Installations

An illustrated chart permits selecting, at a glance, the right type of steam trap for a specific application. "Second-choice" selections are also shown. File-size, the handy guide is part of a 4-page bulletin listing special features, advantages and recommendations for each type of trap. Large, cross-sectional illustrations make for easy reading.

Bulletin 1600, issued by Sarco Company, Inc., Dept. CP, Empire State Bldg., New York 1, N. Y. When inquiring specify CP 4834 on handy form, pages 2 and 3.

Easy-to-use Tables Give Complete Data on Full Line of Indicating Controllers

For the first time under one cover, this 8-page publication lists complete specifications on all Model "C" indicating controllers of this manufacturer. Literature includes potentiometers, Wheatstone bridges, instruments for measuring temperature by means of thermo-couples, rayotubes and thermohms; also units giving either 2-position or Micromax electric control, both position-adjusting for fuel-fired furnaces and durationadjusting for electrically-heated types.

Information is presented in easy-to-use tabular form. Installation and interior views of the instruments are shown. Standard ranges are listed. Catalog ND44 (3), issued by Leeds & Northrup Company, Dept. CP, 4934 Stenton Ave., Philadelphia 44, Pa. When inquiring specify CP 4835 on handy form, pages 2 and 3.

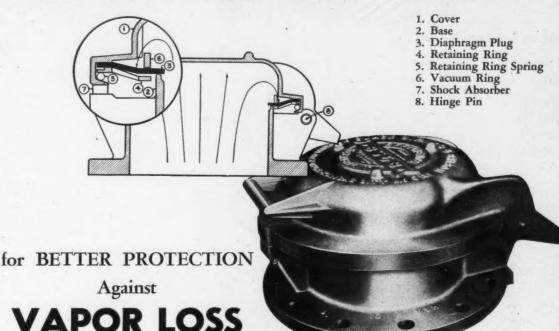
Summarizes Developmental Tests of Synthetic Organic Compounds as Insecticides

Developmental tests of synthetic organic compounds as insecticides are summarized in a 57-page report. These cover 15 species of insects. Plant or foliage used in connection with tests is listed, also results, dosage, etc. Tests cover use as stomach insecticides, fumigants. Contact and phytotoxicity results are included. Methods used are described.

Part I, "Developmental Tests of Synthetic Organic Compounds as Insecticides," issued by US Dept. of Agriculture, Agricultural Research Administration, Bureau of Entomology and Plant Quarantine, Washington, D. C.

APRIL, 1948

BS&B PRESSURE-VENT VALVE



The Black, Sivalls & Bryson Pressure-Vacuum Vent Valve provides positive two-way protection while minimizing vapor losses from tanks containing benzol, alcohol, gasoline and other products economically stored under slight pressure.

Automatically sealed against escape under normal pressures, hinged valve cover lifts clear if over-pressure occurs, providing

quick relief. When vacuum develops, atmosphere lifts patented B S & B diaphragm to permit inbreathing.

Available in a full range of sizes — 2" to 24" diameter. Larger sizes suitable for manway use. Write for full information to Special Products Division, Black, Sivalls & Bryson, Inc., Power and Light Bldg., Kansas City 6, Mo.



Model Number	Size, Inches	Standard Opening Pressure, Ounces	Maximum Opening Pressure, Ounces	Standard Opening Vacuum, Ounces
2VVH	2	3	16	1/2
3VVII	3	3	16	1/2
4VVH	4	2	16	1/2
6VVH	6	2	16	1/2
8VVH	8	. 2	16	1/2
10VVH	10	2	16	1/2
12VVII	12	2	. 10	1/2
16VVH	16	2	8	1/2
20VVII	20	2	6	1/2
24VVH	24	11/2	4	1/2

FOREIGN INQUIRIES INVITED Cable Address: BLACK, KANSAS CITY, U.S.A. OKLAHOMA CITY, OKLA.

VAPOR-SEALED PRESSURE-TIGHT

AUTOMATIC RELIEF - VACUUM-PROTECTED

. . . an important step in manufacturing safety film

Roll upon roll of sheet pulp whipped into a fluffy mass, with all fibers individually exposed for chemical reaction . . . that's a daily assignment for Sprout-Waldron single disc mills.

The same basic function—short fiber separation, is equally important in the production of nitrates, ethers, esters, and CMC. Such marvels of present-day chemistry require correct and carefully controlled stock preparation.



Sprout-Waldron single disc mills offer -

- · Varied and flexible feeding arrangements.
- · All functional surfaces readily accessible for
- Special plate designs for extended range of applications.

Sprout-Waldron Adaptioneering Service — ingenuity + machines + experience — is at your command.

Write Sprout-Waldron & Company, Muncy, Penna.

When inquiring check CP 4837 on handy form, pgs. 2-3

New Literature

Eliminates Dust Nuisance in Packaging Screened Sands

How multiwall paper valve bags and filling machines solved problems of dust and high packaging costs at New Jersey Pulverizing Co., Pinewald, N. J., is told in a 4-page, illustrated case history.

This factual report tells how manufacturer eliminated dust nuisance, moisture-vapor penetration of bags, a returnable bag problem, and increased production while reducing per-ton costs of packaging a variety of screened sands. Case History 19, issued by St. Regis Paper Company, Dept. CP, 230 Park Ave., New York 17, N. Y. When inquiring specify CP 4838 on handy form, pages 2 and 3.

Electric Box Furnaces Harden, Temper, Heat Treat

Small electric heat treating furnaces, with controlling and accessory equipment, are fully illustrated and described in an 18-page loose-leaf bulletin-binder.

Covers units for high, low and intermediate temperatures; hinged and vertical sliding door models; recirculating air draw furnaces; control panel-equipped types; electronic pyrometers, selective power modi-

Bulletins 70 through 76, issued by Cooley Electric Manufacturing Corporation, Dept. CP, 38 S. Shelby St., Indianapolis, Ind. When inquiring, specify CP 4839 on handy form, pages 2 and 3.

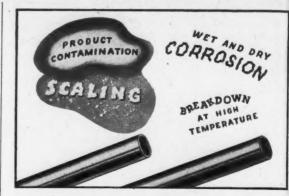
Tells How to Pick Corrosion-Resistant Pipe Material

Information helpful in selecting corrosion-resistant piping material is contained in a 12-page pamphlet. 2 articles by L. G. Vande Bogart, Crane research engineer, which appeared originally in "Valve World," are presented.

"Aids to the Selection of Corrosion-Resistant Piping Material," issued by Crane Company, Dept. CP, 836 S. Michigan Ave., Chicago 5, Ill. When inquiring specify CP 4840 on handy form, pages 2 and 3.

Tell Properties, Applications of Fiberglas-reinforced Plastics

Properties, applications, economics and manufacturing methods of Fiberglas-reinforced plastics are revealed in this 36-page booklet. Includes tables of properties for Fiber-

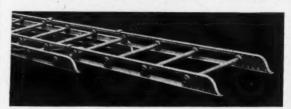


SAFEGUARD YOUR PRODUCTS AGAINST THESE DANGERS . . .

Build an impenetrable wall against these dangers specify Globe Stainless Steel Tubes. Highly resistant to wet corrosion, dry corrosion, scaling, breakdowns at high temperatures, Globe Stainless Steel Tubes, seamless or welded, provide enduring protection. Globe engineers will help you select tubes of the proper analysis for any tube problem you have. We'll gladly send you complete information on Globe Stainless Steel Tubes, seamless or welded (Gloweld), at your request. Globe Steel Tubes Co., Milwaukee 4, Wis., U.S.A.

When inquiring check CP 4841 on handy form, pgs. 2-3

LIGHT DUTY **Aluminum EXTENSION LADDERS**



This extension ladder was designed for use where an extremely light weight ladder of considerable strength is required. Known as Type LDL, this ladder, with rounded ends, is made from two single wall ladders. The fly ladder is supplied with locks, pulleys and ropes as standard equipment. Rungs are corrugated for safety's sake, and are evenly spaced 14" apart. When desired, ladder may be separated so that each section becomes an independent single wall ladder.

If a heavy duty extension ladder is desired, specify Type 2EL or 3EL. Write for full details.

"Original Manufacturers of Aluminum Ladders"

SPECIFICATIONS FOR TYPE LDL						
Model	Length of Ladders					
	Un-extended	Extended	Thickness	Weight		
LDL 2 20'	10' 10"	17' 10"	63/4"	45 lbs.		
LDL 3 24'	12' 0'	20' 2"	63/4"	48 lbs.		
LDL 4 28'	14' 4"	24' 10"	63/4"	54 lbs.		
LDL 5 32'	16' 8"	29' 6"	63/4"	60 lbs.		
LDL 6 36'	17' 10"	31' 10"	63/4"	66 lbs.		
LDL 7 38'	19' 0"	34' 2"	63/4"	70 lbs.		
LDL 8 40'	20' 2"	36' 6"	63/4"	74 lbs.		



When inquiring check CP 4842 on handy form, pgs. 2-3

Since 1905 a Great Name in AIR CONDITIONING

REFRIGERATION

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★ A wide line of both Freon and Ammonia equipment

- ★ Over 40 years of engineering experience at your command
- ★ No job's too complicated for Baker
- Baker's two completely modern plants provide ample manufacturing facilities to meet your needs.
- ★ Baker service is near you. Engineering offices and experienced distributors in principal cities

Write today for literature. Baker Ice Machine Co., Inc., South Windham, Me.



FACTORIES, OMAHA, NEB, AND SOUTH WINDHAM, ME... HEADQUARTERS, SOUTH WINDHAM, ME.

When inquiring check CP 4843 on handy form, pgs. 2-3



The right combination of skilled craftsmanship and selected quality materials provides the chemical industry with better made, longer lasting wire screens and woven wire cloth. Specially designed fabricated products such as strainers, filter cloths, baskets, made of Monel and Stainless Steel are now available.

Write For Bulletins Nos. 5 and 6

There's a Cleveland Wire Screen For Every Purpose.



When inquiring check CP 4844 on handy form, pgs. 2-3

New Literature

glas cloths and mats used to reinforce plastics.

22 charts aid preliminary selection of the type of reinforcement best meeting design requirements. Illustrated with numerous photographs. "Fiberglas Reinforced Plastics," issued by Owens-Corning Fiberglas Corporation, Dept. CP, Toledo 1, O. When inquiring check CP 4845 on handy form, pages 2 and 3.

Analyzes Electronic AC Voltage Regulators

A series of pamphlets analyzes applications, circuits and construction of electronic AC voltage regulators and Nobatrons. Titles include "Diode Controlled Voltage Regulators," "Gain Chart for Cathode Followers" and "Design of Regulated Power Source."

Written by Gladden Houck, Sorensen project engineer, these are mainly reprints from electronic journals. Issued by Sorensen & Company, Inc., Dept. CP, 375 Fairfield Ave., Stamford, Conn. When inquiring specify CP 4846 on handy form, pages 2 and 3.

Tube Cleaner Catalog Covers Chemical, Refinery Fields

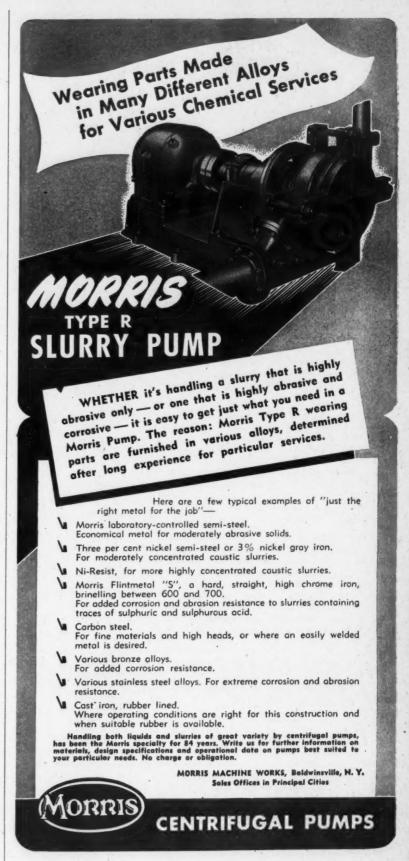
Comprehensive, 48-page catalog covers standard and special tube cleaners for use in chemical processing, refineries and power plants. Practically every type cutter-head, also brushes and air, steam or water-driven motors, electrically-driven tube cleaning equipment and all accessories are shown, described.

Includes operating hints, technical and application data. Catalog 76, issued by Thomas C. Wilson, Inc., Dept. CP, 21-11 44th Ave., Long Island City 1, N. Y. When inquiring specify CP 4847 on handy form, pages 2 and 3.

Welded or Bolted Integral Seat Valves Are High Temperature

Welded bonnet integral seat valves for service at 1500 and 2500 lbs. at 1000°F., also bolted bonnet integral seat valves rated at 1500 lbs., 1000° F., are described in an 8-page catalog section.

Units are of forged steel chrome-molybdenum. Catalog 12-G6, issued by Edward Valves, Inc., Dept. CP, East Chicago, Ind. When inquiring specify CP 4848 on handy form, pages 2 and 3.



When inquiring check CP 4849 on handy form, pgs. 2-3



From start to finish....from basic laboratory research to the smooth functioning of a machine fashioned specifically for your individual needs....our technicians work tirelessly to lick your pulverizing and dust collection problems and to see that they stay licked.

They are steeped in a tradition nurtured by a quarter century of service which rejects the phrase "good enough." They are schooled in the philosophy of constructive dissatisfaction trained never to "let go" until they have given you a MIKRO-PULVERIZER, a MIKRO-ATOMIZER, or a MIKRO-COLLECTOR insuring the last word in the quality of your product and the very last pound in your potential volume.

Or, they will tell you frankly if their preliminary studies, checked against the data gleaned from 55,000 tests already made in our Laboratory, prove that our equipment is not adaptable to your use. They are never permitted to forget that our company built its worldwide reputation on the intensely practical consideration that its own profits will always ascend to the level of its ability to increase yours.

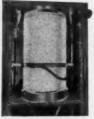
25 YEARS SERVING INDUSTRY

It costs you nothing to sample the thoroughness of these efforts in your behalf. Simply send today for your copy of our Confidential Test Grinding Data Sheet.

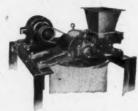
PULVERIZING MACHINERY COMPANY
60 CHATHAM ROAD - SUMMIT, NEW JERSEY



MIKRO-ATOMIZER for ultra-fine grinds



MIRRO-COLLECTOR for optimum dust recovery



MIKRO-PULVERIZER or granular or fine grinds

MIKRO-PULY-ENEZER

Also Makers of the MIKRO-COLLECTOR

When inquiring check CP 4850 on handy form, pgs. 2-3

Electric Welding Catalog Covers Complete Line

12-page electric welding catalog covers complete line of welding electrode holders, ground clamps, cable connectors, machine terminals, cable splicers, lugs and carbon holders. Includes parts information. Form 1948-T, issued by Tweco Products Company, Dept. CP, P. O. Box 666, Wichita 1, Kas. When inquiring specify CP 4851 on handy form, pages 2 and 3.

Nuclear Properties Chart Mounts on Wall, Desk-top

A complete chart of nuclear properties, suitable for mounting on wall or desk-top, includes an interpretation of symbols.

Printed in 2 colors and designed for quick reference. Compiled by E. H. Segre, U. of Calif. Issued by Instrument Development Laboratories, Dept. CP, 223 W. Erie St., Chicago 10, Ill. When inquiring specify CP 4852 on handy form, pages 2 and 3.

Tells Sorbitol Properties, Uses In Moisture-conditioning, etc.

Properties and uses of sorbitol in moisture-conditioning and chemical manufacturing is the subject of a 24-page booklet. Literature gives technical and historical description of this hexahydric alcohol, classifies and charts various grades.

Sections cover sorbitol for conditioning; for drying oils, hard resins, alkyds; in foods, pharmaceuticals; and discuss main classes, typical examples of derivatives. "Atlas Sorbitol," issued by Atlas Powder Company, Dept. CP, Wilmington 99, Del. When inquiring, specify CP 4853 on handy form, pages 2 and 3.

Handbook Covers Horizontal Boring, Drilling, Milling

"Horizontal Boring, Drilling and Milling Machines and Their Application" is a 266-page handbook prepared in sturdy loose-leaf binder for keeping contents perpetually current.

Subjects such as "Diesel Engine Machining," "Traction Motor Machining," etc., will be regularly furnished for insertion. Price, \$5. Remit direct to Giddings & Lewis Machine Tool Company, Dept. CP, Fond du Lac, Wis. Or, when inquiring, specify CP 4854 on handy form, pages 2 and 3.



MODEL EU-16" Utility Filter

Di

• This multi-purpose filter is the only unit specially designed for use with all types of filtering mediums. It is available in two sizes: EU-16" and EFS-12", and a number of capacity sizes providing for 10 to 100 filtering surfaces. The elimination of rubber washers and gaskets is an important feature of the unit. The filtering medium forms a perfect leakproof seal.

Catalog 15 fully describes these units. Send for your copy, now!

CORPORATION
KINGSTON NEW YORK

New York City Sales Office: 40 West 48th Street, New York 19, N. Y.

ASBESTOS FILTER SHEETS • ASBESTOS SHEET FILTERS BOTTLE FILLERS • PORTABLE MIXERS • PLASTIC PUMPS

When inquiring check CP 4855 on handy form, pgs. 2-3

STAINLESS CLAD WELDING

If you are welding Stainless Clad materials use Arcos electrodes for dependable welds.



Specific and clearly illustrated information on "Procedures for Welding Stainless Cled Refining Equipment" is available on request.

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When inquiring check CP 4856 on handy form, pgs. 2-3

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Overhead Monorail Tractors, 1-10 Ton Capacity, Respond to Push-Buttons; Save Time, Labor

Overhead tractors which haul loads of 1 to 10 tons, running on 4 to 24" American standard or wide flange I-beams, are pictured and described in a 4-page bulletin. Electrically driven by push-button control, they are shown to be compact, lightweight, and readily adapted to existing hand-operated material handling equipment. Diagrams show applications and dimensions. Photographs show units operating on crane bridges, electric hoists, and moving hanger-type doors. Bulletin 810, issued by Detroit Hoist & Machine Company, Dept. CP, 8201 Morrow St., Detroit 11, Mich. When inquiring specify CP 4857 on handy form, pages 2 and 3.

Type "B" Crushing Rolls Provide Fine Stage Crushing, Less Wear

These rolls crush such materials as fine aggregates, limestone, ore, roofing granules. Products down to 20 mesh are obtained in some cases when operated in closed circuit with screens.

This 8 page, illustrated bulletin points out operating characteristics, wearability and low maintenance. Describes design and construction features which are said to give better performance and longer life. Dimensions of the four standard size rolls are shown. A handy capacity table based on crushing stone or ore weighing 100 lb. per cu. ft. (crushed) is included. Bulletin 07B6180.

Issued by the Allis-Chalmers Manufacturing Co., Dept. CP, Milwaukee 1, Wis. When inquiring specify CP 4858 on handy form, pages 2 and 3.

Describes Various Fire Alarm Systems; Includes Wiring Diagrams, Electrical Data

Complete information on fire alarm systems and equipment is provided in this signal and control booklet. Includes wiring diagrams, illustrations and descriptions of various systems, with data on boxes, signals, punch and printing recorders. Suggested electrical specifications for code ringing, pre-signal and continuous ringing systems are presented. These may be copied as part of complete building specifications.

Covers all types of boxes and signals, including a signal which sends coded impulses to audible signals after operator makes manual selection. "Signal and Control Apparatus," issued by The Autocall Company, Dept. CP, Shelby, O. When inquiring specify CP 4859 on handy form, pages 2 and 3.

4 and 6-stage Centrifugal Pumps Have Boiler Pressure Ranges Up to 700 psi

4 and 6-stage volute centrifugal pumps for boiler feed and other services are covered by a 6-page, illustrated bulletin. These units are described as having boiler pressure ranges up to 700 psi. Literature shows sectional and exterior views, points out special mechanical features, gives metal specifications and composite dimensions.

Installation views include pulp and paper mills, chemical plants, textile industry, etc. Revised Bulletin 241, issued by Warren Steam Pump Company, Inc., Dept. CP, Warren, Mass. When inquiring specify CP 4860 on handy form, pages 2 and 3.



RESISTANCE WELDED INTEGRALLY BONDED FINTUBES AND FINTUBE HEAT TRANSFER PRODUCTS

When inquiring check CP 4861 on handy form, pgs. 2-3

APRIL, 1948

"In High Favor in the Process Industries"



One of a number of 2,000 gallon I+P+E Agitated Reactors for the esterification of sorbitol

I*P*E Agitated Reactors have well earned this leading position. Here are the reasons why:

- Sound Engineering—Expert Design—Precision Manufactured.
- Compliance with A.S.M.E. Code for any weldable material—steel, stainless steel, monel, nickel, inconel, clad steel with any of these materials.
- All necessary equipment is provided for particular requirements; direct or indirect heating by oil, gas, steam, electricity or Dowtherm; heat exchangers, condensers, receivers, piping, valves.
- Special consideration is given to the best type and speed of agitation.

I*P*E Agitated Reactors are "Standard-Plus" units, made to meet specific needs. They're truly "tailor-made" jobs.

Agitated Reactors are only part of the complete I*P*E line of "Standard-Plus" processing and mixing equipment and agitators. For more information about . . .

Kettles • dissolvers • stills • soap and grease crutchers • extruders • nitrators • sulfonators

- crystallizers continuous mixers paste mixers
- conical dry mixers dough mixers reducing mixers • horizontal mixers • all types of agitators

. . . send for our new detailed catalogue.

SPECIAL UNITS AND COMPLETE PLANTS—I*P*E staff of process plant engineers and designers welcome your inquiry for special needs. No obligation.



When inquiring check CP 4862 on handy form, pgs. 2-3

Shockproof Pivots Prolong Life of Dormant Platform Scales

Dormant platform scales are the subject of a 16-page bulletin. Seven cut-away illustrations explain new mechanical features which eliminate excessive wear on main pivots due to dropping of heavy loads from overhead cranes and hoists, and from lateral movement of scale platform caused by driving trucks upon platform. Tips are given on selection of correct scale, with specific reference to units with or without tare and capacity beams, and those with drop weight mechanisms. Charts present scale dimensions and capacities, platform sizes, dial graduations, beam and tare beam capacities both for self-contained and semi-self-contained scales. Bulletin P714C, issued by Yale & Towne Manufacturing Company, Dept. CP, 4530 Tacony St., Philadelphia 24, Pa. When inquiring check CP 4863 on handy form, pages 2 and 3.

Dept. of Commerce Resumes Publication of "World Chemical Developments"

Part I of "World Chemical Developments, 1940-46" resumes a series of annual reviews issued from 1933 to 1939, and discontinued during the war. Booklet covers chemical developments in most countries of Europe and the British Commonwealth, including information stemming from war and postwar reconstruction programs. Difficulty in obtaining information from areas still suffering from effects of war will delay publication of a second booklet, covering Part II. This will be issued within a few months, it is reported. Price of Part I is 30c. Remit direct to Superintendent of Documents, Washington, D. C. Issued by Office of International Trade, US Dept. of Commerce.

Booklet Gives Helpful Data on Use of Gas Welding Wire

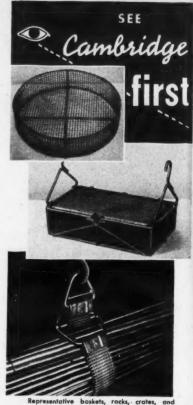
Information on gas welding wire is contained in a wellindexed, 24-page catalog-handbook of gas welding rods. Application photographs are included. Contains helpful data concerning oxy-acetylene flames, torch tips, pipe welding, weights of weld metal deposit, weights of gas welding rods, cost estimate for manual oxyacetylene welding. Reference chart covers manufacturer's welding electrodes and gas welding rods.

Describes complete line, giving application, procedure, proper torch adjustment, physical properties, etc., of each gas welding rod. Printed in 3 colors. "Page Gas Welding Rods," issued by Page Steel & Wire Division, American Chain & Cable Company, Inc., Dept. CP, Monessen, Pa. When inquiring specify CP 4864 on handy form, pages 2 and 3.

Presents Reactions of Organic Compounds, from Standpoint of Laboratory Practice

"Reactions of Organic Compounds" (1948 edition) is a 481-page text. Like the first edition, published in 1936, it considers typical groups of organic compounds, presenting a comprehensive account of their reactions from the point of view of laboratory practice.

Book is revised to incorporate important advances in the use of olefins, acetylenic compounds, diazomethane, cadmium alkyls and alkali metal organic compounds,



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When inquiring check CP 4865 on handy form, pgs. 2-3

saturated and unsaturated hydrocarbons, and in developments in hydrogenation and oxidation, general methods of organic syntheses. Author, W. J. Hickinbottom. Price, \$6. Remit direct to Longmans, Green and Company, Inc., Dept. CP, 55 Fifth Ave., New York 3, N. Y. Or, when inquiring, specify CP 4866 on handy form,

Material to Lay, Repair Concrete Floors, Is Quick-setting, Dustless, Plain or Colored

Practical data on floor maintenance, new concrete construction and tile-jointing are detailed in this 8-page booklet, with illustrations. Literature outlines 4 simple steps in making permanent installations for 8 standard factory floors. Coverage figures are given, also information concerning corrosion-protection and wearability.

Material is said to be quick-setting and dust-proof, not shrinking or chipping away even when drawn to a feather-edge, and permitting surface traffic within 24 hrs. or less after installation. In natural shade or colors. "Hydroment" booklet, issued by The Upco Company, Dept. CP, 4809 Lexington Ave., Cleveland, O. When inquiring specify CP 4867 on handy form, pages 2 and 3.

Self-bonding Wire Metallizes without Preparation; Sprays Directly on Steel

"Sprabond," a self-bonding metallizing wire which permits metallizing without preparation, is described, with illustrations, in a 2-page circular. Literature states that this product eliminates elaborate mechanical preparation for good metallizing results.

How the metal is sprayed directly upon smooth or highly-polished steel and many other materials is revealed. Three steps are outlined for building up a worn shaft, as compared with 8 steps formerly. Only preparation needed is to clean shaft, according to Bulletin 57. Issued by Metallizing Engineering Company, Inc., Dept. CP, 38-14 30th St., Long Island City 1, N. Y. When inquiring specify CP 4868 on handy form, pages 2 and 3.

451-Page Plastics Handbook Coordinates, Condenses, Indexes Data of 600 Firms

Primarily a handbook for plastics molders and fabricators, the 451-page "Handbook of The Society of The Plastics Industry" coordinates, condenses and indexes standard information on plastics and plastics practices from more than 600 firms. It includes 500 charts and illustrations; 72 in the chapter on mold design.

There are detailed tables of tolerances for molding various plastics under a wide variety of conditions. A large section is devoted to machining and finishing. Types of laminates, standard grades, and fabrication into finished parts are considered. Literature also covers classification of molding materials; design standards for inserts, and their application; cementing and assembly; testing, etc.

Price to non-members of SPI, \$7.50 per copy. Members receive first copy free, additional copies at \$4.50. Remit direct to Society of The Plastics Industry, Dept. CP, 295 Madison Ave., New York 17, N. Y. Or, when inquiring, specify CP 4869 on handy form, pages 2 and 3.



The new, improved Sturtevant dry-batch mixers thoroughly and efficiently mix two or more substances into a homogenous and inseparable whole, every part of which has the same analysis. The 4-way mixing action does a more rapid mixing job than other machines. The single receiving and discharging opening permits tight sealing during the mixing process.

Open-door accessibility permits

thorough cleaning. The mixer is simple and easy to operate . . . hand lever controls both receiving and discharging. These efficient Sturtevant drybatch mixers are available in five sizes with mixing capacities from $7\frac{1}{2}$ tons to 75 tons per hour. Write for bulletin and complete information today.



STURTEVANT MILL COMPANY

119 Clayton Street, Boston 22, Mass.

Designers & Manufacturers of

SEPARATORS . CONVEYORS .

MECHANICAL DENS and EXCAVATORS

When inquiring check CP 4870 on handy form, pgs. 2-3

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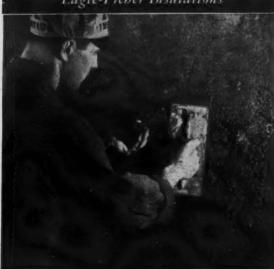
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Eagle-Picher Super "66" **Insulating Cement**

for permanently efficient, economical installation!

"Springy Ball" pellets of Eagle-Picher Mineral Wool give Super "66" tremendous insulating efficiency. Each pellet contains heat-saving dead air cells that remain after the insulation dries to preserve permanent low thermal conductivity. In addition, Super "66" actively inhibits rust on metal equipment. It's all-purpose, sticks to any shape surface, and withstands temperatures up to 1800 F. Complete technical and application data on request.

Let these Eagle-Picher products also save you money ... power ... time

Insulating Felts · Supertemp Block · Blankets · Loose Wool Pipe Covering · Stalastic · Insulseal · Insulstic Swetchek · Finishing Cements · Insulating Cements



When inquiring check CP 4871 on handy form, pgs. 2-3

Sturdy Wooden Pallets Stack High; Are Made with Rust-resistant 2-1/2" Screw-nails

Sturdy pallets of strong, high-quality lumber for moving or storing bags, boxes and barrels are covered in a 4page, illustrated bulletin. Nine installation-type photographs demonstrate their widespread utility and highstacking qualities.

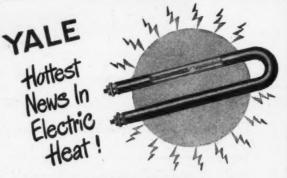
Five types of pallets are illustrated, described, also special sizes. Fastened together with rust-resistant, 21/2" screw-nails, inserted in undersize pre-drilled holes. "Ozark Master Pallets" bulletin, issued by Ozark Pallet Company, Dept. CP, Bergman, Ark. When inquiring specify CP 4872 on handy form, pages 2 and 3.

Bulletins Describe 8 and 18 hp Diesel Engines and Diesel Pumping Units

8 and 18 hp, 1500 rpm diesel engines and diesel pumping units are subjects of two 4-page, illustrated bulletins. General specifications are listed, and diesel engine bulletin includes performance curve charts.

A formula for determining proper pumping units is contained in diesel pump bulletin, and average watergallonage handled by these centrifugals through medium short pipe lines at rated bhp of the diesel engines is shown to range from 1160 to 2610 gpm at 20' head or 231 to 520 gpm at 100' head, these figures including suction.

Engines are 1 and 2 cylinder, 4-cycle type. Various accessories are shown. Pumping units are available in



Yes, YALE . . . the No. 1 name in locks . . . now offers an enclosed electric heating element that you know will give uniform heat. YALE's famous manufacturing controls assure:

1. uniform distribution of the refractory within the sheath for uniform insulation

2. accurately centralized location of the resistor for uniform heat transfer

Immediate shipment on Rod-Type Heating Units

-first of a complete YALE line of electric heating
units. Send for further information. The Yale & Towne Manufacturing Company, YALE Electric Heating Unit Sales, Room 1042, Chrysler Build-ing, New York 17, N. Y., MUrray Hill 9-6700.

YALE Electric UNIFORM HEAT THE BRIGHT SPOT IN ELECTRIC HEATING

When inquiring check CP 4873 on handy form, pgs. 2-3

Save Time PARTS



This strainer body is just one of many examples of the use of Lenape standard press formed parts to produce a highly satisfactory product without delay. All required design conditions were met by the use of 4" and 2" Lenape welding necks taken from stock—there was no waiting for castings, and the entire order was filled in less than two weeks.

Normally, Lenape welding necks, nozzles, covers and specialties are used on pressure vessels, tanks, towers and similar equipment.

If you believe we can be of service to you, do not hesitate to send prints or ideas—we'll be pleased to work with you. If you do not have the Lenape catalog in your reference files, write today for a copy.

MYDRAULIC PRESSING AND FOREING CO.

LENAPE HYDRAULIC PRESSING & FORGING CO. WEST CHESTER, PA. ---

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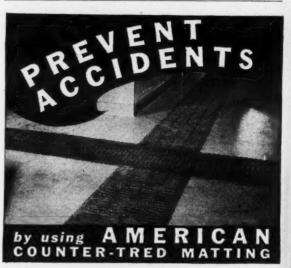
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When inquiring check CP 4874 on handy form, pgs. 2-3



A durable rubber and cord matting with a resilient nen-slip surface for use in wet or slippery areas. Provides safety underfoot. Ridged bottom affords aeration and drainage. Easily handled for cleaning. Keeps the feet dry. %" thick. 24" wide. any length.

AMERIFLEX HARDWOOD LINK MATTING TUF-TRED TIRE FABRIC MATTING NEO-CORD OIL AND GREASE RESISTANT COUNTER-TRED MATTING EZY-RUG RUBBER LINK MATTING PERFORATED CORRUGATED MATTING

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When inquiring check CP 4875 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

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belt-connected, direct and close-coupled models, the latter with clutch. Two bulletins: "Low Hp Diesel Engines" and "Diesel Pumping Units," both issued by Hallett Manufacturing Company, Dept. CP, 603 S. Redondo Blvd., Inglewood, Calif. When inquiring specify CP 4876 on handy form, pages 2 and 3.

Tells How to Weld Many Kinds of Alloys Using Bronze Arc Welding Electrodes

Factual information on welding a wide variety of alloys using bronze arc welding electrodes is contained in an illustrated, 24-page booklet. Procedures and techniques are described, and a comprehensive chart lists alloy types, specifications, chemical compositions, physical properties and weldability values using various bronze electrodes.

All grades of manufacturer's welding electrodes are cataloged, including those made of aluminum bronze, phosphor-bronze, beryllium-copper and silicon bronze. Bulletin W-17, issued by Ampco Metal, Inc., Dept. CP, 1745 S. 38th St., Milwaukee 4, Wis. When inquiring specify CP 4877 on handy form, pages 2 and 3.

Properties, Industrial Uses of Nylon Told in 30-Page Booklet

Industrial uses of nylon textile fibers are enumerated and described in an illustrated, 30-page booklet. Sections are devoted to nylon's properties of strength, light weight, toughness and abrasion resistance, elasticity, low moisture absorption, heat setting, resistance to light, chemicals and heat, or attack by mildew, mold and insects, its non-flammability and non-toxicity.

"Nylon Textile Fibers," issued by E. I. du Pont de Nemours and Company (Inc.)., Nylon Division, Dept. CP, Wilmington 98, Del. When inquiring specify CP 4878 on handy form, pages 2 and 3.

Agitator Quickly, Thoroughly Mixes Contents of 30 and 55-Gallon Drums

How to quickly and thoroughly mix the contents of a drum is told, with cut-away illustration, in a 6-page, pocket-size bulletin. Literature points out 5 features of this drum agitator, and contains simple instructions for insertion and removal of agitator for cleaning and re-use. Made in sizes to fit 30 and 55-gal. drums. Also non-removable type. Drum Agitator bulletin.

Issued by The American Pulley Company, Dept. CP, 4200 Wissahickon Ave., Philadelphia 29, Pa. When inquiring specify CP 4879 on handy form, pages 2 and 3.

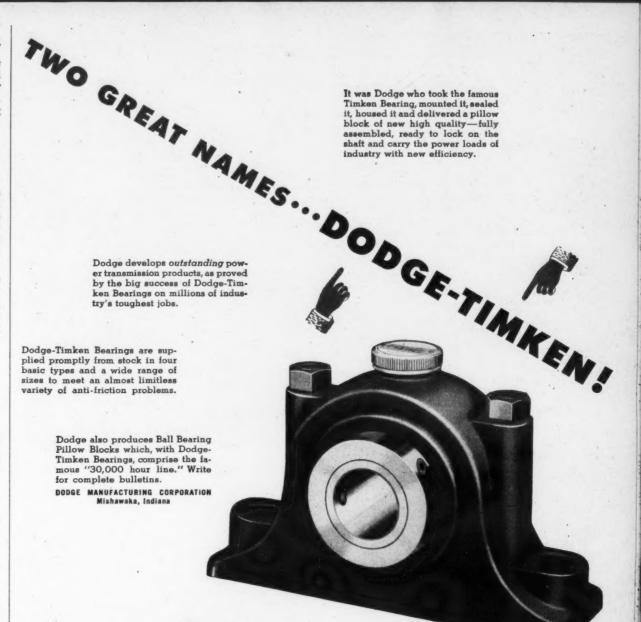
Describes Conductivity Measurements in **Boiler Operation**

"Conductivity Measurements in Boiler Operation" is a 9-page bulletin describing manual and automatic equipment for measuring electrolytic conductivity of condensed steam, boiler water, raw water and return con-

Conductivity cells and sample coolers are also listed and described. Issued by Industrial Instruments, Inc., Dept. CP, 17 Pollock Ave., Jersey City 5, N. J. When inquiring specify CP 4880 on handy form, pages 2 and 3.

Dodge also produces Ball Bearing Pillow Blocks which, with Dodge-Timken Bearings, comprise the famous "30,000 hour line." Write for complete bulletins.

DODGE MANUFACTURING CORPORATION Mishawaka, Indiana





CALL THE TRANSMISSIONEER

He is your local Dodge Dis-tributor—factory trained— qualified to suggest ways to improve your machine per-formance, increase production. Look for his name under "Power Transmission Equipment'in your classified phone book



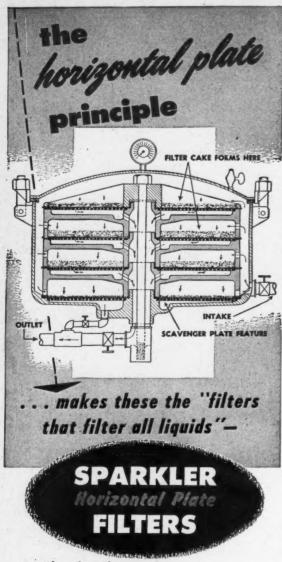
Copyright, 1948, Dodge Mfg. Corp.

FOR YOUR NAME PLATE REQUIREMENTS, WRITE OUR SUBSIDIARY, ETCHING COMPANY OF AMERICA, 1520 MONTANA STREET, CHICAGO 14, ILLINOIS

When inquiring check CP 4881 on handy form, pgs. 2-3

APRIL, 1948

Page 65



. . here's the story:

• Sparkler Horizontal Plate Filters handle any liquid from heavy varnishes to light alcohols, including products such as acids, oils, beverages, milk, pharmaceuticals, plating solutions, water, etc.

Equally efficient performance on intermittent or continuous operation, under a wide range of temperature, pressure and viscosity conditions.

Equally effective whether removing carbons and contact clays or clarifying and polishing with filter aids.
 Patented Scavenger Plate permits complete batch filtration. (It's virtually an auxiliary filter with an independent control valve.)

 Unexcelled filter cake stability — no slipping or breaking.

zontal plane and filter aids floated into position uniformly, filtration takes place uniformly over entire filtering areas. Flow through filter is always with gravity. Sparkler Filtration Is Engineered Filtration—we invite correspondence on your problem. You will receive the advice of filtration scientists with a quarter of a century of experience in a specific field.

SPARKLER MANUFACTURING CO. MUNDELEIN, ILLINOIS

When inquiring check CP 4882 on handy form, pgs. 2-3

Processing Equipment.

Continuous Process Applies Metal Film to Sheet Surfaces

Continuous application, by evaporation, is made to paper, plastic sheets and textiles at rates up to 500 ft. per min.

USES — Fabrics, plastic sheets and various types of papers may be coated with thin films of metal with this continuous system.

FEATURES — Because of the extreme thinness of the film, the flexibility of the base material is not affected and the moisture vapor transmission is reduced. Adhesion varies with the material.



Machine applies thin metallic films to paper, plastic sheets, and textiles

Finish is limited only by that of the base material and on polished surfaces the brilliance exceeds that of foil. Method is inherently more practical and economical than the rolling of foil and its cost is materially lower.

Capacitors or condensers formed from zinc-coated paper have self-healing qualities, promising longer life to such units.

DESCRIPTION — A vacuum chamber, as shown in the illustration, includes sight glasses which permit the observation of the material in process. This chamber is evacuated by means of large vacuum diffusion pumps backed by mechanical vacuum pumps.

Interior of the chamber contains the necessary rolls to hold the material being coated. Central section of the chamber contains a source of heat which melts and vaporizes the metal to be deposited on the material. Necessary controls are shown in the illustration.

Roll of material is placed in the right end of the chamber. Chamber is then tightly sealed and evacuated by means of the vacuum pumps. Once a high vacuum has been attained, the metal in the center of the chamber is vaporized and the material started in motion. As the material passes above the source of metal vapor, the metal condenses on it forming an extremely thin film. This process takes place continuously and at a high rate of speed varying with the materials being processed.

After the entire roll has been processed, the vacuum is broken and the roll removed from the left end of the machine. In a similar fashion paper for use in electrical condensers can be coated with zinc at linear speeds up to 500 feet per minute.

SOURCE - Process is now in a stage of advanced pilot-

plant operation at National Research Corporation, Dept. CP, 70 Memorial Drive, Cambridge 42, Mass., . . . or for more information check CP 4883 on handy form, pages 2 and 3.

5-ton Capacity Air Conditioner Is Portable, Self-contained

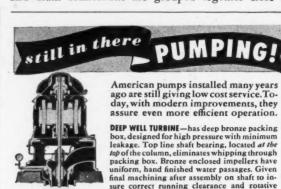
Requires no building alterations; operates remotely, singly, multiply; occupies 7-1/2 sq. ft.

USES — Self-contained 5-ton capacity air conditioner for use singly, in multiple, or from a remote position. Single unit will serve several office-size rooms, a department, or smaller sections of one floor.

Used in multiple to air-condition an entire building, series of floors, a single floor, or any large area. Can be used from remote position by means of a simple duct system. Particularly useful in buildings constructed without provision for air conditioning systems.

FEATURES — This is a "packaged" unit, completely self-contained, and requiring about half the space occupied by an ordinary office desk. Installations are made quickly and economically, without major building alterations. Versatile and portable.

DESCRIPTION — Single steel cabinet contains refrigerating unit, electric motors, cooling coils and fans. Occupies 7½ sq. ft. of floor-space. All electrical, water and drain connections are grouped together close to





TWO STAGE CENTRIFUGAL PUMPS

For clear liquid booster service. Split case, ball bearing design. Passage from first to second stage entirely within casing, reducing friction losses to minimum. Back-to-back, single suction, bronze, enclosed impellers. Capacities from 50 to 1500 GPM. Heads from 50 to 450 feet. Bulletin No. 246.

balance. Send for Bulletin No. 245.

Also Double Suction, Single Stage Centrifugal, Axial and Mixed Flow, Sewage and Sludge Pumps.

WELL WORKS

122 No. Broadway, Aurora, III.

CHEMICAL PROCESSING Preview

In our 80th year • RESEARCH • ENGINEERING • MANUFACTURING
Pumping, Sewage Treatment, and Water Purification Equipment

When inquiring check CP 4884 on handy form, pgs. 2-3

floor for easy assembling or dismantling. For winter operation a heating coil may be added.

In operation, a fan draws room air through intake grille near base of air conditioning chamber. Two filters, 1" thick, remove dust, dirt and pollen from air before it passes over Multipath cooling unit. Thermostatic expansion valve controls flow of refrigerant. Counterflow principle makes possible effective use of entire coil. Air and refrigerant flow in opposite directions. Turbulence and better heat transfer are accomplished by a staggered tube system.

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Conditioned air is circulated from removable hood at top of cabinet by 4 removable air outlets with air-flow deflector blades. Blower discharge is created by 12" fan powered by 3/4 hp electric motor. Fan has 10-phase speed-control. Like motor, it is mounted on rubber in a sound-insulated chamber beneath hood. Cooling is produced by refrigerating unit, mounted on vibration-absorbing rubber pads in an insulated, virtually sound-proof compartment.

Refrigerating unit has standard 2-cylinder compressor mounted on twin, water-cooled condensers, connected in parallel. Automatic water valve regulates flow through condensers in accordance with condensing pressures. Unit is powered by 5 hp, 3-phase, 220-volt electric motor, and operation is controlled automatically by a thermostat actuated by temperature of room-air entering conditioner.

SOURCE — Developed by General Motors Corporation, Frigidaire Division, Dept. CP, Dayton 1, O. . . . or for more information check CP 4885 on handy form, pages 2 and 3.

10-lb. Dry Chemical Extinguisher Smothers Fire Despite Drafts

Non-toxic chemical cloud insulates operator from radiant heat; is non-conductor

USES — Dry chemical fire extinguisher for use under all climatic conditions and in the presence of winds and drafts. Also effective on hot metal surfaces, electrical equipment, and in combatting radiant heat.

FEATURES — Assures more efficient performance by the novice operator. Forms no toxic gases. Stream will not conduct electricity. Chemical is non-abrasive, harmless to finished surfaces, and easily removed with a brush. Will not deteriorate.

Light-weight unit is easily carried by men or women operators. Easily and quickly recharged without removing from premises, or use of special tools. Rapid maneuverability. Combines high efficiency under most conditions with maximum protection both to user and equipment installations. Approved by Associated Factory Mutual Laboratories and Underwriters' Laboratories, Inc.

DESCRIPTION — 10 lb. unit. Dry chemical is ejected under pressure in a flat stream that separates flame from burning material, instantly forming a dense, fire-smothering cloud over a flaming area up to a distance of 18'. This also creates an insulating barrier between operator and flame, giving protection from radiant heat.

Forms an insulating film on hot metal surfaces, helping to guard against re-flash. Squeeze-grip nozzle and ½" ID pressure hose.

SOURCE — A product of All-Out Mfg. Corporation, Dept. CP, New York, N. Y., . . . or for more information check CP 4886 on handy form, pages 2 and 3.

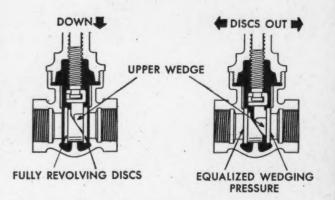
Ingenuity in gate valve design fulfills seven objectives*



Darling Parallel Seat Gate Valves are available in a wide range of sizes and for all types of normal and unusual service, and for pressures up to 3000 pounds. Likewise, Darling Taper Seat, Solid or Slotted Wedge Gate Valves are available for most services.

Corrosion resistant valves. In addition to conventional iron, bronze and steel types, Darling specializes in valves for any corrosive fluid: iron body valves with special alloy trim; iron body, rubber lined, with special alloy trim; all bronze; and all special alloy. Darling's 60 years of experience in meeting unusual requirements is always at your service.

POSITIVE, EASY CLOSING ... REGARDLESS!



Regardless of years of hard, continual service, involving anything from extreme disc and seat wear to actual body distortion, this valve continues to give positive, leak-proof closure... and without strong-arm methods... an advantage found only in Darling Fully Revolving Double Disc Parallel Seat Gate Valves.

Note how the face of the upper wedge is radiused, while the adjacent face of the lower wedge is straight. Thus wedging pressure on the discs is automatically equalized, always uniform. If, because of body distortion, the valve seats become unparalleled, this unique compensating wedge principle still provides perfect seating and tight closure without forcing.

The discs themselves are free to revolve fully and seat in a different position at every closing. Uneven wear, another common cause of leaks, is definitely avoided.

Combine these unique features—automatic seating adjustment and uniform wear—and it's easy to see why these Darling Valves can always be counted on for positive, easy closing—regardless!

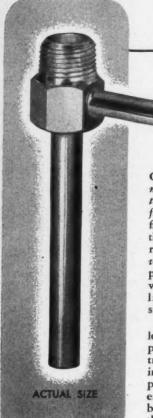
DARLING VALVE & MANUFACTURING CO.
Williamsport 4, Pa.

Outline your needs and ask for specific data on the proper Darling Valves...or send for the complete 300-page Darling Catalog No. 17M. It describes Darling Valves of all types and is full of valuable information.



THE VALVE MARK OF QUALITY ... WATCH FOR IT

When inquiring check CP 4887 on handy form, pgs. 2-3



Capable of the maximum degree of evacuation and rated as the fastest and most efficient filter pump available, the Sargent Hydroaspirator has a positive seal valve system which prevents the entry of water into the suction line when suction is stopped.

The uniformly excellent performance of this pump is due to the extremely precise machining which goes into its production. It is made entirely of nickel plated brass with ball valve in the side arm, $\frac{3}{8}$ " I.P.S. male thread at the top and hexagonal wrench seat, Length 4 inches.

Each\$1.75 Per dozen 20% discount.

SARGENT

SCIENTIFIC LABORATORY EQUIPMENT AND CHEMICALS
E. H. SARGENT & COMPANY, 135-145 EAST SUPERIOR ST. CHICAGO II, ILL.
MICHIGAN DIVISION 1959 EAST JEFFERSON DETROIT MICHIGAN

When inquiring check CP 4888 on handy form, pgs. 2-3

Processing Equipment

Reactor Speeds Cold Process Water Conditioning

Combines mixing, floc formation, settling and thickening; cuts retention time to 1 Hour

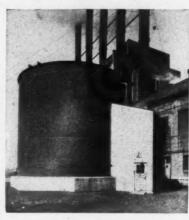


Fig. 1—Rapid Reactor softens, clarifies raw turbid water for process cooling

USES — Rapid reactor for hastening cold process water conditioning. For mixing, floc formation, settling and thickening.

For water clarification, with or without subsequent filtration, to prepare water for boiler feed, cooling process. For cold process softening of water utilizing reagents such as lime and soda

ash, preparing water for cooling ponds or direct service water for cooling or process, or for subsequent softening, as for boiler make-up. Applicable to any process in which water is to be purified by precipitation.

Permits introduction of chemical reagents for coagulation of turbidity alone, for partial softening with coincident turbidity reduction, or for complete softening

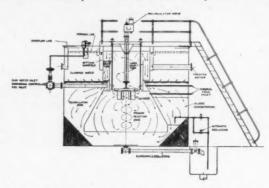


Fig. 2—Showing progress of raw water, addition of reagents, recirculation arrangements and method of collecting clarified effluent

and turbidity reduction. Manufacturer recommends this equipment for conditioning a turbid supply for Zeolite softener feed.

Fig. 1 shows an installation softening and clarifying raw turbid water at a steel plant for process cooling. After additional softening, part is also used for boiler feed.

FEATURES — Combines, in a single reaction vessel, basic elements for mixing, floc formation, settling and thickening. Permits chemical reactions and separation of coagulated solids in "only a fraction of the time" required in intermittent cold process softeners, manufacturer states. Other reported advantages:

Smaller equipment plus shorter retention time lowers costs. Process reduces chemical consumption in most

SPECIALISTS

GET BETTER RESULTS



. . IN LAW

. in VALVE MANUFACTURE

You wouldn't hire a criminal lawyer to fight a patent suit. And the same principle holds true when you buy corrosion-resistant valves.

Stainless steels and related alloys require entirely different handling from other metals, in every step in fabrication. That is why specialization is so important in the successful manufacture of corrosion-resistant valves. Aloyco offers you that. We make nothing but valves of corrosion-resistant alloys. Consult our engineers on your requirements.

Alloy Steel Products Co., Inc. 1302 W. Elizabeth Ave., Linden, N.J.



lloyco Gate Valve



GATE VALVES - GLOSE VALVES
T VALVES - CRECK VALVES
SAMPLING VALVES - ARGLE VALVES
TANK VALVES
TANK VALVES
GAUGE GLASS SITTINGS
GAUGE GLASS SITTINGS

When inquiring check CP 4889 on handy form, pgs. 2-3



Compact and Portable

Occupies no more space than a 5 gallon bottle. May be used whereever there is an electrical outlet.

No Plumbing Connections

Needs no permanent piping connections, or special plumbing service. Water connections are served adequately with rubber tubing.

Automatic, Continuous Operation

After opening up the water supply, the Midget operates automatically and without attention, delivering a continuous supply of fresh distilled water that is chemically and physically and bacteriologically pure.

Easy to Clean

Easy access to the inside of the evaporator for removing depositis provided by removing cover.

Construction

All vital parts are copper, all evaporating and condensing surfaces coated with pure tin, to safeguard purity of the distillate. Volatile gases such as carbon dioxide, chlorine and ammonia are expelled at top of still before vapors are condensed. The flow of cold raw water can be adjusted to control the temperature of the distilled water. Write for complete details on "Precision" Water Stills. No. 88-6-D.



Precision Scientific Company

• • Scientific Research and Production Control Equipment • • •

When inquiring check CP 4890 on handy form, pgs. 2-3

Page 68

CHEMICAL PROCESSING Preview

ULTS

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cases. Requires less floor space or less housing, whichever may be the case. Automatic raw water control.

DESCRIPTION — Briefly, this process involves introduction of raw water into an environment of chemical reagents and pre-formed precipitates, followed by thorough agitation, discharge into a zone of relative quiescence at controlled velocity, and final passage into an integral settling and thickening reservoir from which it is collected for use.

Retention time depends on raw water characteristics and use to which treated water will be put. Usually, however, it is reported to be about 60 to 70 minutes as compared to 4 hrs. or more by conventional methods. This is brought about through scientific application of the principle of sludge recirculation, where sédimentation tank is so arranged with forced pumping of sludge that, when chemicals are added to incoming water, they react in presence of large quantities of sludge, accelerating chemical reactions. Initial colloidal precipitate grows rapidly and is coagulated and separated from water.

Fig. 2 shows progress of raw water, addition of reagents, recirculation arrangements and method of collecting clarified effluent. Manufacturer recommends a coagulant for most installations, whether process is for clarification only or a combination of clarification and softening. Chemical reactions are complete, and raw water is controlled automatically through customary regulating valve and float. Once adjusted, the sludge blow-off valve operates at proper rate without attention.

SOURCE — Developed by Cochrane Corporation, Dept. CP, 17th St. & Allegheny Ave., Philadelphia 32, Pa. ... or for more information check CP 4891 on handy form, pages 2 and 3.

Silent, Spring-closed Doors Make Waste Cans Fireproof

Fabricated from heavy 20 gauge cold rolled steel; all welded construction

USES - For indoor and outdoor service in waste disposal that will promote sanitation and aid in prevention of fire hazards from accumulated waste, paper, refuse,

FEATURES - One-and-one-half inch high, non-rusting stainless steel feet keep receptacle off concrete floors and walks. Rounded corners resist hard use and elimination of sharp edges reduces possibility of injury to workers and damage to clothing.

DESCRIPTION - This advanced design is incorporated in a complete line of heavy-duty receptacles, meeting a wide range of requirements. They are fabricated from heavy twenty-gauge cold rolled steel and reinforced by rounded corners. Two independently hinged doors permit simultaneous opening. Heavy tensioned springs keep these doors closed when not in use and eliminate the necessity of placing the receptacles on perfectly level surfaces. Rubber bumpers silence closing action of the doors.

The receptacles are finished in a standard olive green and white enamel and are equipped with full size burlap bags for quick, easy disposal of deposited waste.

SOURCE - Bennet Mfg. Co., Dept. CP, Alden, N. J. or for more information check CP 4892 on the handy form, pages 2 and 3.

Here is FLEXIBILITY



GLEN "340" MIXERS

Mix Everything from **Light Foam Latex to Heavy Abrasive Paste**

These large capacity, flexible mixers with economical, heavy duty drive, fingertip variable speed control, and interchangeable bowls and beaters yield big volume production and cut costs whenever and wherever installed.

Pre-loading of Interchangeable Bowls **Makes Mixing Practically Continuous**

Steam-jacketed bowls, completely covered bowls for dust control, as well as other accessories are available.



is raised and automatically floof to a depositor below. continuous conveyor belt. tilted, pouring its contents into a depositor at a controlled rate of flow.

MEETS EVERY UNLOADING REQUIREMENT



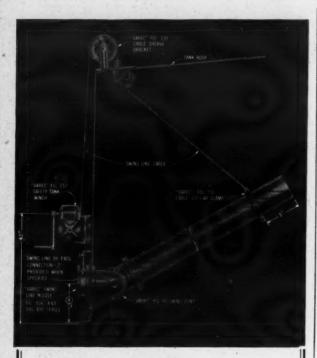


I-With the AMF Glen Bowl 2-A special bowl tilting truck 3-A gate can be provided Unloader, the operator is available to pour the con- on the bottom of the bowl for presses a button and the bowl tents through a hole in the discharging contents onto a

AMF GLEN MIXERS are available in 120, 160 and 340-quart capacities. For complete information and specifications, write American Machine & Foundry Company, 485 Fifth Ave., New York 17, N.Y. Ask for DM-302.



When inquiring check CP 4893 on handy form, pgs. 2-3



WITHDRAW LIQUIDS from Any Desired Level in Your Tank with a "VAREC" Approved SWING LINE ASSEMBLY



Here's the "VAREC" Equipment you need for a simple single Swing Line Assembly:

"VAREC" Fig. No. 90 Swing Joint
"VAREC" Fig. No. 304 or 306 Series Swing

Line Nozzle
"VAREC" Fig. No. 157 Sefety Tank Winch
"VAREC" Fig. No. 135 Cable Sheave Bracket
"VAREC" Fig. No. 150 Cable Collar Clamp

This assembly has a by-pass arrangement whereby the contents of the tank fills the empty buoyant swing pipe so that it may be lowered quickly and easily.

Another standard arrangement is the double Swing Line Assembly that is raised and lowered by two cables on a double drum winch. Still other assemblies can be made with the complete line of "VAREC" Approved Swing Line Equipment. Write today on your letterhead for the "VAREC" P-7 Handbook and Catalog describing these items.



"VAREC" Fig. No. 340
Swing Pipe Level Indicator tells you the exact position of your swing pipe. The unit attaches directly to any "VAREC" Approved Safety Winch. CP-5



THE VAPOR RECOVERY SYSTEMS COMPANY

NEW YORK CLEVELAND CHIC

CLEVELAND CHICAGO TO

TOLISA PIOUSTON

CABLE: VAREC COMPTON (All Codes)

When inquiring check CP 4894 on handy form, pgs. 2-3

Processing Equipment

Brazed Malleable Pipe Fittings Handle 450° F., 300 psi

Eliminate costly small diameter welds; lack of threading cuts weight 30%



Brazing a threadless pipe fitting

USES — Threadless malleable pipe joint fittings for brazing standard black steel or wrought iron pipe. For meter, instrument and boiler-feed lines; gas, air and lubricating oil piping; hydraulic systems not over 300 lbs., and iron or steel process piping.

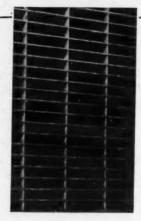
Especially for non-critical use with moderate pressures and tem-

peratures in pipe sizes 2" and under. Useful in thin walls or partitions, and for radiant heating.

FEATURES — Advantageous for inaccessible or confined locations where it is difficult to use a pipe wrench. Eliminate difficult or costly welds of small diameter piping ½ to 2" in size. Resistant to contrac-

Hendrick Aluminum Grating

SAVES WEIGHT - RESISTS CORROSION



Because it combines light weight, with ample strength, and high corrosion-resistance, Hendrick Mitco Aluminum Grating is especially desirable for many purposes.

It is being successfully used in such widely different applications as shipboard installations and in sewage disposal plants.

Its light weight minimizes handling and erection costs, and maintenance painting is not required. Write for full information on this recent Hendrick development.



Perforated Metals
Perforated Metal Screens
Architectural Grilles
Mitco Open Steel Flooring,
Shur-Site Treads and
Armorarids

HENDRICK

Manufacturing Company
32 DUNDAFF STREET, CARBONDALE, PA.
Sales Offices in Principal Cities

When inquiring check CP 4895 on handy form, pgs. 2-3

PROMPT DELIVERY

HERCULES Aero

(RUBBER CUSHIONED)

CARBOY BOXES

Specifications:

80X \$1ZE: 13¾" x 13¾" x 22" Including Hood (1.D.)

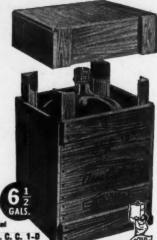
WEIGHT:

App. 26 lbs. (Box) App. 14 lbs. (Bottle)

CARBOY:

6½ Gals. capacity (7 Gals. overflow)

Regulation Polystyrene CAP supplied Gompiles with Classification I. C. C. 1-D



NATIONAL BOX & LUMBER COMPANY

When inquiring check CP 4896 on handy form, pgs. 2-3



TABLE GUMMER GLUE THAT REALLY WORKS?

The new PAISLEY Table Gummer Glue No. 1707, made from synthetic resins and latex, permanently adheres ungummed paper labels and other porous materials to a wide variety of metals and surface finishes. Ideal for fastening instruction labels, circuit diagrams, brand labels, etc., to plain, lacquered, painted tin and metal surfaces ... also to glass, many plastics, as well as to porous surfaces. Useful in numerous combining operations, cork to metal, felt to cardboard,

fabrics to metal, glass, ceramics, etc. Typical field uses include labeling of refrigerators, household appliances, radio chassis, tin cans, drums, over printed areas of cartons and displays.

TRIAL QUART \$2.00. Economical prices in larger packings. Order today, or send for free Laboratory Report and Adhesive Operation Data Sheet.



PAISLEY PRODUCTS INCORPORATED

Manufacturers of Glues, Pastes, Resin Adhesives, Cements and Related Chemical Products 1770 CANALPORT AVE., CHICAGO 16, ILL. & 630 W. Sist STREET, NEW YORK 19. N. Y.

When inquiring check CP 4897 on handy form, pgs. 2-3

tion or expansion, and withstand higher rates of vibration than threaded joints, manufacturer reports.

Fitting outlets can be faced in exactly the desired direction, since lack of threads eliminates "backing off" or forcing fittings to obtain proper alignment. Also, joints can be made flush against wall or against each other. Can be fabricated to exact dimensions, with pipe resting solidly against bottom of cup; hence, they facilitate accurate measurements.

Since pipe $2\frac{1}{2}$ " and under loses one-half its wall thickness by threading, this method is said to utilize full pipe strength and permit use with thin-wall pipe. Turbulence is reduced due to equal internal diameters of pipe and fittings. This reduction is particularly marked when handling viscous or semi-solid fluids. Economical, and easily installed by any competent pipe fitter.

DESCRIPTION — Black, malleable iron socket-type fittings. Cups are reamed to accommodate outside diameters of standard pipe, producing a shoulder or stop when pipe is inserted. Handle 150-lb. working steam pressure at 450° F., or 300-lb. non-shock oil, water or gas lines at 150° F. Absence of chamber permits 30% less weight than same size and kind of threaded fittings, manufacturer reports. Sizes up to, and including, 2".

It is unnecessary for brazing torch to play at any particular angle, since the silver brazing alloy flows by capillary action to form a seamless, permanently bonded joint. Engineering tests are said to reveal that pipe thus installed will fracture before the brazed joint is damaged, and under hydrostatic pressure, the pipe or fitting will rupture before the joint leaks.

Silver brazing alloys melt at 1170° F. or higher, permitting use of oxyacetylene torch for making installations. No special equipment is required, and normal silver brazing techniques are employed.

SOURCE — Manufactured by Stanley G. Flagg & Company, Inc., Dept. CP, 1421 Chestnut St., Philadelphia 2, Pa. . . . or for more information check CP 4898 on handy form, pages 2 and 3.

Foundry Goggles, in 2 Sizes, Are Well-ventilated

Lenses are clear or Calobar in medium, dark or extra-dark shades; deflect flying objects

USES — Foundry safety goggles for protection against impact hazards commonly encountered in melting, pouring, chipping, grinding, babbitting, riveting, hand tool and machine operations.

FEATURES — Extra-large ventilation-area helps prevent fogging of lenses. Deflects sparks and flying objects.

DESCRIPTION — Available with Super Armorplate or 6 Curve Super Armorplate lenses, clear or Calobar in medium, dark or extra-dark shades. Wirescreen ventilated eyecups are fastened to leather mask. Corduroy binding extends around entire edge of mask for comfort. Rubber, one-piece headband is easily and quickly adjusted.

Large size fits medium and large faces; small size is made up on factory delivery basis for small faces.

SOURCE — Developed by American Optical Company, Dept. CP, Southbridge, Mass. . . or for more information check CP 4899 on handy form, pages 2 and 3.





Advanced forming techniques at CMH make possible production of a wide range of sizes and long continuous mill length as standard items. Types are available with either annular or helical convolutions. Ends may be flanged or equipped with fittings to meet virtually any installation requirements. Sizes range from 5/16" to 6" I.D. (Incl.)

REX-FLEX offers all the outstanding characteristics of stainless steel in a variety of hose and tubing types. Light in weight . . . high in strength . . . leak-proof . . . highly resistant to corrosion . . . extremely flexible. It is easy to install and may be bent in multiple, planes by hand. It is a "natural" for all flexible stainless steel hose and tubing installations.



*the science of FLEXONICS..."the controlled bending of thin metals for use under varying conditions of temperature, pressure, vibration and corrosion"...is exemplified in the basic products of Chicago Metal Hose Corporation,

Write today jor complete information on REX. FLEX Stainless Steel Flexible Hose and Tubing — ask for specifications and data sheets.

CMH FLEXIBLE METAL HOSE CHICAGO METAL HOSE CORPORATION

Maywood, Illinois Plants at Maywood, Elgin and Rock Falls, Illinois

When inquiring check CP 4900 on handy form, pgs. 2-3



HIGH QUALITY WAXES WITH SUPERIOR SPECIFICATIONS AND A TREMENDOUS PRICE ADVANTAGE

MICO.			J. J. J.	
MICRO- CRYSTALLINE WAXES	Crown Wax	Melting Point °F.	Pen. with	Color N.P.A.
	500	185/190	10 Maximum	2½ Maximem
	1035	195/200	2 Maximum	2 to 21/2

EMULSIFIABLE WAXES

					-
Crown Wax	Melting Point °F.	Pen. with 100 Grams	Color N.P.A.	Acid Number	Sap. Number
23	180/185	6 Maximum	4½ to 6	20 to 25	55 10 65
36	180/185	8 Maximum	51/2 to 8	30 to 35	85 to 95

Complete information, prices and samples available on request.

PETROLITE CORPORATION, LTD. WAX DIVISION 30 Broad St., New York 4 REFINERY: Box 390, Kilgore, Texas

SALLY INERT SOLVENT RETENTION OOD COMPATIBILITY

When inquiring check CP 4901 on handy form, pgs. 2-3



EVERY TYPE OF ADHESIVE FOR EVERY INDUSTRIAL USE When inquiring check CP 4902 on handy form, pgs. 2-3

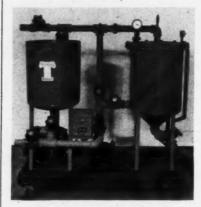
Processing Equipment

Removes 1/10-micron Suspended Solids from Plating Solutions

1 to 600 gpm units cover full pH range; include self-cleaning "backwash"

USES - For clarification of plating solutions, etc. For removing all suspended solids down to 1/10 of a micron, when used with proper type filter aid.

For example, a rubber-lined model is used at Harrison, N. J., tube plant of Radio Corporation of America to filter continuously two 175-gal. cyanide silver plating baths.



Model SA-1000 filter

Can be used with activated carbon as an adsorption agent to remove color, taste and smell.

FEATURES-No replacement parts necessary. Operator can clean unit quickly and thoroughly without dismantling or replacing any parts such as bags, sheets or filter pads. At the RCA plant, mentioned above, cleaning is required only twice weekly despite 3-shift operation.

Self-contained, requiring minimum labor to operate. Portable units are easily moved from one tank to another. Rapid and efficient.

DESCRIPTION — Utilizes a series of rigid porous membranes constructed of Aloxite, powdered metals or woven wire mesh. These act as support for filter aid, and are permanent part of filter.

Filter aid acts not only as filtering medium, but protects membranes from any sediment being deposited on their surfaces. Unit recently improved to contain self-cleaning 'backwash."

Constructed of stainless steel, iron,

ROTARY

LAMMERT

QUIET

VACUUM TO 0.02 M.M. BAR. 3-580 C.F.M.



Investigate! MODEL SWMF.

NEW!

Continuous Self Purging Principle

Expels the Contaminating Influence!

PERFORMANCE VACUUM

LAMMERT & MANN CO.

215-21 N. WOOD ST.

ENDURING

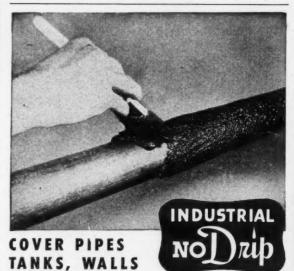
CHICAGO 12, ILL.

A HALF CENTURY

OF SERVICE

TO SCIENCE AND INDUSTRY

When inquiring check CP 4903 on handy form, pgs. 2-3



Anyone can brush, trowel or spray NoDrip on any clean, dry surface. Goes on like plaster, forms a seamless, protective coating. STOPS CONDEN-



SATION DRIPI NoDrip keeps equipment and floors safe and dry; prevents corrosion of metal and prolongs its life. Acid, alkali and brine resistant. Comes in 1, 5 and 55 gal. drums, ready for use.

TRY NoDRIP
Apply NoDrip to a small area, compare the results with uncovered portions.

Send for free NoDrip Handbook

J. W. MORTELL CO. 530 Burch St., Kankakee, Illinois When inquiring check CP 4904 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview



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When inquiring check CP 4906 on handy form, pgs. 2-3

Offices in Key Cities Coast to Coost

Consult Sweets Files, Chemical Engineering Catalog,
Refinery Catalog, ASH & VE Guide for full information.

Processing Equipment

brass. Also rubber-lined. Capacities from 1 to 600 gpm, covering entire pH range. Consists of precoat tank, filter chamber, pump, motor, necessary piping and valves, all mounted on one platform.

SOURCE — A product of Titeflex, Inc., Dept. CP, 500 Frelinghuysen Ave., Newark 5, N. J. . . . or for more information check CP 4907 on handy form, pages 2 and 3.

Photo Copier Includes Electric Timer

Sets automatically for uniform results in any quantity

USES — Photo copying machine for intermittant or constant volume production of printed or written copy and photographs. Manufacturer stresses use as contact or reflex printer.

FEATURES — Operates in ordinary indoor light without need for dark-room, focusing or heating unit. Assures uniform quantity results. Operation is simple, easily learned.

DESCRIPTION — Automatically-set electric timer. Copying surface is 14 x 20". Accessories include trays, dry-



Electrically-timed photo copier

er, paper, chemicals, color filter, red pilot light, squeegee board and glassware. 115 volts AC.

Of heavily reinforced plywood, covered with washable rubberoid cloth. Heavy hinges, durable clamps and unbreakable Tufflex glass. General catalog contains full details.

SOURCE — Made by General Photo Products Company, Dept. CP, General Photo Bldg., 15 Summit Ave., Chatham, N. J., . . . or for more information check CP 4908 on handy form, pages 2 and 3.



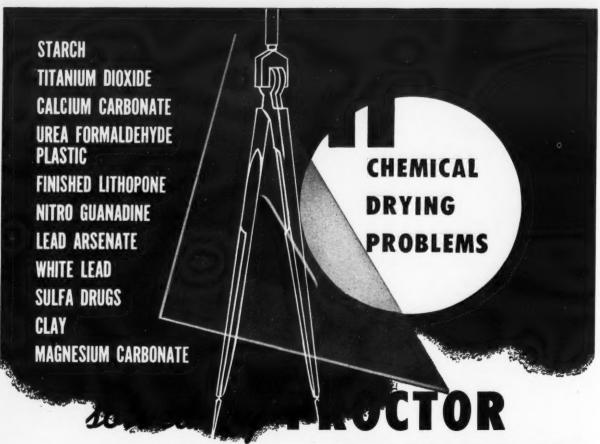
... Now available for

PROMPT DELIVERY

● And they're even better than before. These mills still feature Bartlett-Snow's exclusive triple processing action that imparts approximately three times the dispersing and homogenizing action of other mills, resulting in extremely rapid mixing, thorough blending, and exceptional stability of the finished product. Now−in addition−the mills are fitted with a hand wheel and calibrated scale that permits the rotor-stator gap to be adjusted with micrometric accuracy−even while the mill is running − and a new method of stator support, eliminating threads, that keeps the rotor and stator always parallel, insuring production of exceedingly uniform particles. Fully descriptive bulletin sent promptly − or let us test run a sample of your product. Write, − The C. O. Bartlett & Snow Company, 6241 Harvard Avenue, Cleveland 5, Ohio.



When inquiring check CP 4909 on handy form, pgs. 2-3



Each of the 11 products listed above represents a distinct and different drying problem. Magnesium carbonate, for example, must be dried from an initial moisture content of 565% (bone dry weight basis) to a moisture content of 0.1% at the rate of 500 pounds per hour (commercial dry weight), while starch is dried from 78.5% initial moisture content to 13.6% at the rate of 4,800 pounds per hour. Each of these products (and the list could be expanded many times) was studied by Proctor engineers, and the performance of the Proctor equipment finally

RESEARCH

installed was guaranteed in writing in the sales contract. In some cases the basic designs of the equipment was similar—but in each case modifications were made to suit the individual product or plant requirements. While all of these products are being dried in huge continuous systems equipped with preforming feeds—many problems brought to Proctor engineers have called for small tray or truck dryers. You may be sure that any problem—large or small—that you bring to Proctor & Schwartz, Inc. will receive the full benefit of all of the ingenuity and means at our disposal that were applied to solving the problems

covered by these case histories.

Write for your copy
of this New Proctor Booklet

If you have not already received this latest booklet—which gives complete information on these 11 chemical drying problems—write for your copy today. Ask for Bulletin #309.

PROCTOR & SCHWARTZ, INC. . PHILADELPHIA 20, PA.

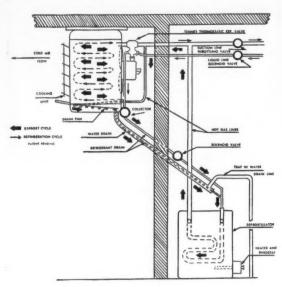
When inquiring check CP 4910 on handy form, pgs. 2-3

Automatic Defrost Systems Have Wide Application

17 sizes, 1/3 to 3-ton capacities use any form of heat to defrost low-temp. evaporators

USES — Systems for automatic defrosting of low temperature evaporators, using any form of heat for defrost purposes.

FEATURES — Utilizes all advantage of the automatic hot gas defrost system without attendant difficulties. Defrosting speeds and accurate timing control of defrost and refrigeration cycles eliminate excessive temperature-rise in refrigerator.



Automatic hot gas defrost system

Variable defrosting speeds and capacities plus variable refrigeration cycle. Speeds and capacity of defrosting are not limited by size of condensing unit. Connection into discharge side of compressor is unnecessary.

DESCRIPTION — Diagram shows relation of various components, also complete separation of the system from the condensing unit. Important is the Defrostolator, at lower right, arranged for floor mounting outside refrigerator. This unit consists of insulated copper tank for holding fixed water-quantity; a heat exchange surface within tank; and a low-wattage electric immersion heater.

System-controls include remote bulb thermostat, a rheostat shown mounted outside of insulated Defrostolator, and a manual switch. Latter can be set for automatically alternating defrost and refrigeration cycles or for straight refrigeration. Starting-load throttling valve is furnished for main suction line, shown at top right. Two small solenoid valves include one for the main liquid feed line, the other for the refrigerant drain line from collector, under cooling unit, to Defrostolator. Designed for most efficient operation with the Defrostolator, cooling unit contains special circuit-finned coil, and is equipped with collector for holding fixed quantity of refrigerant. Collector is mounted under the unit, in liquid refrigerant drain-line to Defrostolator. False bottom of cooling unit is mounted on a hot

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refrigerant coil for quick, complete defrosting at this point during each defrost cycle. A drain pan and 7/8" drain line are included, and each unit has a thermostatic expansion valve.

Expressed in heat units, defrosting capacity depends on temperature to which solution is allowed to cool before repeating refrigeration cycle. Speed of defrost is determined by water-temperature in Defrostolator. Both temperatures are thermostat-controlled and variable over

Duration of refrigeration cycle depends on time necessary to replace heat units lost by water in Defrostolator during defrost cycle, as represented by differential setting of thermostat. Response to this setting is governed by rate at which heat is added to water, and is rheostat-controlled over wide range.

System is available in 17 sizes ranging from about 1/3 to 3 tons capacity. Defrostolator tank sizes vary from 24 x 12 x 20" to 36 x 18 x 24". Equipment includes 1 or more unit coolers with thermostatic expansion valves, a single Defrostolator and complete set of defrost controls for simultaneous defrosting of all unit coolers in the system. Manufacturer recommends use of a liquid suction line heat exchanger on all low temperature installations. This is not included.

While capacity of standard cooling units is based on 12° temperature-difference, variations can be furnished.

SOURCE - Tenney Engineering, Inc., Dept. CP, 26 Avenue B, Newark 5, N. J., is the manufacturer, . . . or for more information check CP 4911 on handy form, pages 2 and 3.

Single-Phase Squirrel Cage Motor Has Capacitor-Start, Induction-Run

Available in ratings of 3/4, 1, 11/2, 2, 3, 5, and 71/2 bp (Frames 203 to 324)

USES - Can be used for practically any single-phase application on compressors, refrigeration and air conditioning equipment, reciprocating and centrifugal pumps, and others.

FEATURES - New design uses capacitor for starting only. Starting switch or relay disconnects capacitor as motor approaches full speed; and then operates as induction run motor.

Air openings in lower half of end brackets give full protection against dripping liquids. Self-sealed, prelubricated ball bearings provide effective lubrication for five years or longer without repacking.

DESCRIPTION - All-steel construction-steel frame, feet and end brackets.

Motors are available for 60, 50 and 25 cycles, singlephase, 110/220 volts dual voltage (frames 203-225), 110 or 220 volts single voltage (frames 254 and above); 3450, 1750, 1160 rpm for 60 cycle, 2875, 1475, 970 for 50 cycles and 1450 rpm for 25 cycles. 40°C. rise continuous duty on 60 and 25 cycle, 50°C. rise continuous duty on 50 cycle.

SOURCE — New design Type CAP introduced by Westinghouse Electric Corporation, Dept. CP, 306 Fourth Ave., Box 868, Pittsburgh 30, Pa., . . . or for more information check CP 4912 on handy form, pages 2 and 3.

EQUIPMENT CORROSION?

That is the Problem

... bere is the Solution ...

FOLLOW THE AMERCOAT LINE OF MOST RESISTANCE.

Typical Chemical Industry Problems

Equipment

Characteristics Of Exposures

Coating Recommended

To Be Coated LABORATORY

EQUIPMENT Table Tops, Fume Hoods and Ducts, Equipment, Etc.

Corrosion caused by a wide variety of chemicals, fumes and condensation. AMERCOAT No. 33 recommended for table tops fume hoods, ducts, lab equipment and concrete floors. Pro-vides an attractive abrasion resistant finish that will resist most chemicals and solvents.

Steel and Concrete

TANKS AND

TANK CARS

Corrosion of interior of pipe caused by chemicals, food products, sewage, sour crude; also by electrolytic action. Contamination of contained product by iron or calcium pick-up. Exterior of pipe subject to chemical and electrolytic corrosion.

Corrosion of interior caused by acids, salts, alkalies, petroleum products, and organic chemicals. Contamination of contained product by contact with iron. Vapor space corrosion. Varying temperatures.

Corrosion of exterior caused by weathering, chemical fumes and spillage of contents of tank.

For maximum resistance to severe conditions, AMER-COAT Plastic Lined Pipe is recommended. For sewage, petroleum, food products, and milder chemicals, AMER-COAT No. 23, 44 or 55 are used. Exterior of piping subject to corrosive chemicals, fumes, and soil corrosion, AMERCOAT No. 33 provides outstanding protection.

Interior—AMERCOAT No. 23 is a general purpose lining material for concrete and metal tanks for both chemicals and food products. AMERCOAT No. 44 is designed for concentrated acids and salts; AMERCOAT Nos. 31 and 55 for concentrated alkalies and salts at elevated temper tures. Write for recommendation on your specific problem.

Exterior—AMERCOAT No. 33 is recommended for maximum resistance to weathering, chemical fumes, and spillinge.

and spilled.

AMERCOAT No. 33 recommended for concrete floors and structural steel. Excellent abrasion resistance—uniffected by acids, oils, and cleaning compounds.

MERCOAT No. 88 recommended for masonry cellings and walls—interior and exterior. Odorless during and after application. Weatherproof and waterproof. Resists bacteria, mold and fungus growths.

AMERCOAT has excellent adhesion to both concrete

AMERCOAT has excellent adhesion to both concrete

and metal. Available in 14 colors.

AMERCOAT No. 33 recommended for most exterior surfaces of process equipment at temperatures up to 150° F. AMERCOAT No. 61 recommended for stacks and other hot surfaces at temperatures to 600° F. Write

FLOORS WALLS, CEILINGS, STRUCTURAL STEEL Spillage and fumes from corrosive chemicals. Abrasion on floors from foot traffic. Mold and fungus growth Weathering on exterior surfaces.

PROCESSING EQUIP. Pumps, Conveyors, Scrubbers, Etc.

Corrosion due to acids, sails and al-Filters, Blowers Ducts, kalies; spillage, fumes and moisture condensation.

Free Corrosion Manual

Causes of corrosion and how to prevent it are fully covered in this booklet as indicated by the actual excerpts shown above. Since causes of corrosion vary in different industries, individual manuals have been prepared for each industry.



Your Copy

Write for

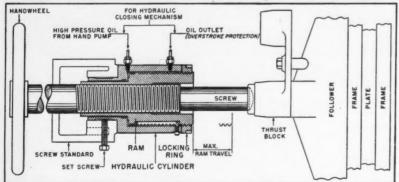
Specify Your

APRIL, 1948

When inquiring check CP 4913 on handy form, pgs. 2-3

new! HYDRO-KLOSER

TAKES BACK BREAKING LABOR OUT OF FILTER PRESS OPERATION



Now you can equip your 24" and larger Shriver Filter Presses with a really simple hydraulic closing device that's inexpensive, easy to install and operate. It eliminates the hard labor and safety hazards of manual closing, and reduces opening and closing time considerably.

time considerably.

This compact, self-contained, fool-proof
Shriver Hydro-Kloser replaces the thrust obtained by manual movement of the screw

with the straight thrust of the hydraulic ram. A few easy strokes of the hand pump close the filter press tight, and a locking nut keeps it tight. To open the press, the locking nut is released and the hydraulic pressure is then released by opening the pump.

The "Hydro-Kloser" is a real aid to filter press operating economy and convenience. Write for Bulletin 125.

T. SHRIVER & COMPANY, Inc., 846 Hamilton St., Harrison, N. J.

When inquiring check CP 4914 on handy form, pgs. 2-3

THESE NEW CATALOGS HELP YOU SELECT THE VALVE FOR EASY CONTROL — QUICK SHUT-OFF OF AIR · GASES · LIQUIDS · SEMI-SOLIDS



Information on valve types, sizes, applications, dimensions and control methods for Rockwell Slide Valves, "Kwikleen" Valves and Butterfly Valves; the kind of information that helps you select, install and operate more easily. Any or all of these new valve bulletins yours for the asking.

ROCKWELL VALVES

Slide or Butterfly Types in All Metals

W. S. ROCKWELL COMPANY-220 Eliot St., Fairfield, Conn.

When inquiring check CP 4915 on handy form, pgs. 2-3

Processing Equipment

Mixer Counter-rotates at 200 to 12,000 rpm

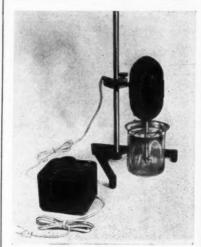
Lab unit employs 2 propellers, continuously variable speeds

USES — High-speed laboratory mixer for thorough mixing of ingredients in nearly-filled containers. Useful in preparing samples.

FEATURES — Mixes, rather than stirs, at speeds hitherto available only in large production equipment. Results are said to be equally satisfactory. Permits use of nearly-filled containers.

DESCRIPTION — Counter-rotating action results from 2 motors driving 2 concentric oppositely-rotating shafts, propeller-equipped. This produces annular, rather than circular flow.

Materials, including heavier particles, are pulled swiftly into propellers, passing through shearing zone. Liquid level remains essentially unaffected, with almost no cavitation or centrifu-

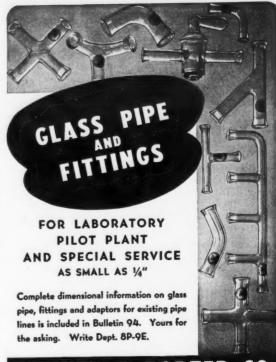


Counter-rotating mixer

Motors are 1/30 hp, permitting relative speeds of about 200 to 12,000 rpm. Use of variac provides continuously variable speed control. With exception of a bottom guide-bearing of graphited bronze, immersible parts are stainless steel. 4 permanently-greased, high speed precision ball bearings.

Motors and variac are completely enclosed for protection from corrosive fumes. If used on direct current, rheostat can be furnished in place of variac. Mixer includes support stand, clamp, variac and synthetic cord.

SOURCE — A development of Brookfield Engineering Laboratories Inc., Dept. CP, Stoughton, Mass., . . . or for more information check CP 4916 on handy form, pages 2 and 3.



FISCHER & PORTER CO.
HATBORO, PENNSYLVANIA

When inquiring check CP 4917 on handy form, pgs. 2-3



Few materials can be economically reduced from lump size to final degree of fineness in one operation. To prepare for final reduction, S-W Crushers are designed to handle materials which are soft, pressure-sensitive, tough, friable, crystalline, or fibrous.

For best recommendations, consult Sprout-Waldron today!

SPROUT-WALDRON & CO.

Manufacturing Engineers
MUNCY PER

PENNSYLVANIA

When inquiring check CP 4918 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

Electrical Tank Heats "Difficult" Compounds Thoroughly, Evenly

Plus-500° F. unit handles butyrate acetate, ethyl-cellulose, rosin, synthetic glue

USES — Tanks for electrically heating compounds which require high temperatures.

Especially designed for heating insulating compounds, plastic, wax, synthetic glue, rosin, asphalt, pitch, tar, ethyl-cellulose, butyrate acetate and similar compounds which present problem of heating thoroughly throughout.



Electric compound heating tank

FEATURES — Eliminates cold and hot spots. Assures even temperature without scorching. Avoids fire hazards. Accurate and safe.

DESCRIPTION — Temperature range extends to plus 500°F. Unit illustrated has inside dimensions of 12" diam. by 24" deep, with 2½" oil chamber, 2" rock wool insulation, 8400 watts, 220 volts, 3-phase AC. Capacities of 3½, 12, 30 and 60 gals. are standard, and units can be equipped with agitator when required. Also made to specification.

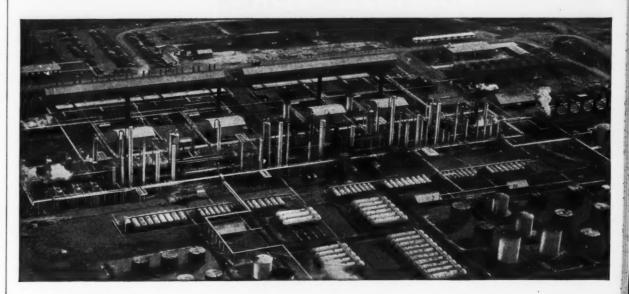
Units are electrically welded steel construction. Jacket surrounding entire inner compound chamber contains special non-carbonizing heat transfer oil with flash point of 700°F. This economically distributes heat throughout compound chamber. Rock wool insulation is tightly packed between oil chamber and outside shell, retaining heat and keeping tank exterior cool.

Large outlet at center of compound chamber eliminates clogging or freezing of drain when compound cools. An inlet and drain is provided for heat transfer oil. Tank has insulated, removable lid. Electric heating elements, located at 2 sides and bottom of tank between oil chamber and outside shell, are exposed neither to compound nor oil. Two thermostats with pilot light control temperatures of compound and oil bath.

As an additional temperature check, a stainless steel base accurate thermometer is installed in oil chamber. Melting chamber contains no obstructions. All controls are contained within tank.

SOURCE — A development of D. C. Cooper Company, Dept. CP, 1467 S. Michigan Ave., Chicago 5, Ill., . . . or for more information check CP 4919 on handy form, pages 2 and 3.

LOOK TO CELANESE



FOR ORGANIC CHEMICALS

Look to Celanese as a dependable source of supply for your chemical requirements. A leading producer of Formaldehyde, Acetaldehyde and Acetic Acid, Celanese is also producing Methanol, Acetone, n-Propyl and iso-Propyl Alcohols in addition to other related organic compounds.

More than fifteen years of Celanese research in the field of petroleum chemistry have provided the Celanese Chemcel plant, at Bishop, Texas, with a high degree of flexibility in the production of organic chemicals from petroleum natural gases.

IN GREATER VOLUME

This flexibility has enabled Cetanese to meet the constantly changing needs of chemical markets for basic organic chemicals and important new compounds.

New chemicals are continuously being developed in the extensive Celanese laboratories. Specifications on new products as well as data on a regular list of Celanese* organic chemicals are available on request. CELANESE CORPORATION OF AMERICA,

Chemical Division, 180 Madison Ave.,

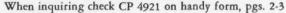
New York Ió, N. Y.

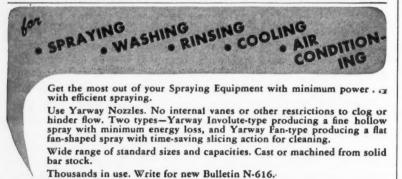
cals

ALDEHYDES . ALCOHOLS . ACIDS . SOLVENTS . GLYCOLS . KETONES . PLASTICIZERS

When inquiring check CP 4920 on handy form, pgs. 2-3







YAR WAY SPRAY NOZZLES



When inquiring check CP 4922 on handy form, pgs. 2-3

Processing Equipment

Coats Test Panels to Any Film-thickness

Adjustable blades lay dry, wet films 3 to 12" wide



Adjustable film-forming blade

USES — Adjustable blade for laying down a film-forming media of predetermined film thickness and surface-area on test panels or other surfaces.

For application of wet or dry films, even on extremely long test panels. Primarily for the paint industry.

FEATURES — Minimizes possibility of wavy or non-uniform draw-downs. Ordinary wear does not affect accuracy. Blades are replacable, repairable and non-corrosive, eliminating expensive repairs or replacement of complete instrument. Quickly cleaned. DESCRIPTION — All stainless steel unit consists of rectangular bar; ends of which are attached permanently to 2 blocks. Height of bar permits clearance between bar and test panel. Right-angle slotted blade 1/4" thick fits vertically between 2 end blocks, fastening to bar by means of 2 thumb-bolts.

Six brass shims, accurate to .00005" and marked for thickness identification, permit laying down various film thicknesses with only one blade, setting gate clearance by arrangement of shims. Shims are .001 to .006" thick. Gate clearance of .003" draws down wet film about .0015" thick.

Standard blades are 3 and 6" wide, weighing 1¾ and 3 lbs., respectively. Also made to order in widths up to 12". Deep paint well permits extremely long draw-downs, if required. Wet film thicknesses are about ½ the gate clearance. Dry films of any thickness can be applied.

Thickness of wet films can be checked in "less than 10 seconds" with aid of a direct-reading wet film thickness gauge.

SOURCE - Made by Henry A. Gard-



When inquiring check CP 4923 on handy form, pgs. 2-3



BELT LACING and FASTENERS for transmission and conveyor belts

ING



STEEL BELT LACING

World famed in general service for strength and long life. A flexible steel-hinged joint, smooth on both sides. 12 sizes. Made in

steel, "Monel Metal" and non-magnetic alloys. Long lengths supplied if needed. Bulletin A-60 gives complete details.

FLEXCO

BELT FASTENERS AND RIP PLATES

For conveyor and elevator belts of all thicknesses, makes a tight but joint of great strength and durability. Compresses belt ends between toothed cupped plates. Templates and FLEXCO Clips speed application. 6 sizes. Made in steel, "Monel Metal", non-

magnetic and abrasion resisting

magnetic and abrasion resistance alloys.

By using Flexco HD Rip Plates, damaged conveyor belling can be returned to satisfactory service. The extra length gives a long grip on edges of rip or patch. Flexco Tools and Rip Plate Tool are used. For complete information ask for Bulletin F-100.

Sald by supply houses

Sold by supply houses everywhere

FLEXIBLE STEEL LACING CO.

4649 Lexington St. Chicago 44, III.

CONVEYOR BELTS EASILY FASTENED"

When inquiring check CP 4925 on handy form, pgs. 2-3

4-WAY VALVE PROTECTION



"Sealdport" lubrication Nordstrom Valves

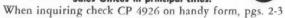
- 1. Seals the valve
- **Prevents sticking**
- Protects the seat
- **Prolongs valve life**

Lubrication is necessary to assure perfect valve performance in chemical services. The design and characteristics of Nordstrom valves make operation positive and guard against corrosion and erosion. Ask for descriptive

NORDSTROM Lubricated PLUG

NORDSTROM VALUE DIVISION -Rockwell Mfg. Co.

400 North Lexington Ave., Pittsburgh 8, Pa. Sales Offices in principal cities.



Processing Equipment

ner Laboratory, Inc., Dept. CP, 4723 Elm St., Bethesda, Md. . . . or for more information check CP 4927 on handy form, pages 2 and 3.

Engine Burns Butane, Oil or Natural Gas

1-cylinder, 2-cycle, 34.3 hp unit has chemical, petroleum uses

USES - Multi-fuel engine for chemical, petroleum, paper and textile applications.

Currently used in petroleum industry as long-life prime mover for oil well pumping units, pipe line pumps, generators, etc.

FEATURES — Can be operated as cold-starting full diesel, or converted to burn natural gas or butane. Quickly converted in the field. Construction eliminates costly cylinder reboring and shut-down time.

DESCRIPTION - Single-cylinder, horizontal, two-cycle Lorain type "O". A companion power plant to current Lorain type "L".

Rated at 34.3 hp at 450 rpm, with 91/2" bore, 10" stroke. Timken bearings on crankshaft and cross-shaft. Alloy cast iron wet-sleeve type cylinder liners assure long wear, easy replacement on location.



Multi-fuel engine

Condenser-type cooling system eliminates need for water pump, and makeup water is negligible. Standard equipment includes Twin Disc clutch, Pierce governor, Air Maze oil bathtype cleaner, McCord lubricator. Over-all dimensions of unit: 59" high, 88" long, 58" wide. Full specifications in Bulletin LO.

SOURCE - White-Roth Machine Corporation, Dept. CP, Lorain, O., is the maker . . . or for more information check CP 4928 on handy form, pages 2 and 3.

Cellosolve

SOLVENT FOR IMPROVED

Also Methyl "Cellosolve" and "Carbitol" Brand Solvents

lacquers and dones

textile printing

leather finishing

cleaning solutions

CARBIDE AND CARBON CHEMICALS CORPORATION

Unit of Union Carbide and Carbon Corporation

UCC

30 East 42nd Street, New York 17, N. Y. OFFICES IN PRINCIPAL CITIES

When inquiring check CP 4929 on handy form, pgs. 2-3



When inquiring check CP 4930 on handy form, pgs. 2-3



One of the newer applications of Kinney High Vacuum Pumps is the automatic vacuum treating of sealing oil used in the hydrogen cooling system of large turbine generators. Here, low pressure treatment constantly removes water and entrained gas from the oil supply to assure efficient sealing of the hydrogen system. For compactness, reliability and high pumping speeds, Kinney High Vacuum Pumps are unsurpassed. They are serving countless industries where low pressure processing simplifies operations and cuts production costs. Kinney Single Stage Vacuum Pumps produce low absolute pressures to 10 microns; Compound Pumps to 0.5 micron

Write for Bulletin V45

KINNEY MANUFACTURING COMPANY

3573 WASHINGTON ST., BOSTON 30, MASS.

New York • Chicago • Philadelphia • Los Angeles • San Francisco We also manufacture Liquid Pumps, Clutches and Bituminous Distributors.

When inquiring check CP 4931 on handy form, pgs. 2-3

Processing Equipment

Self-adhesive Labels Identify Test Tubes, Slides, X-rays

Adhere despite humidity, temperature, etc.; peel off without leaving deposit

USES — "Kum-Klean Self-Adhesive" labels for marking apparatus, equipment and X-ray negatives in chemical and X-ray laboratories. For labeling bottles, test tubes and microscopic slides. Designed for adherence to glass, metal, plastics, ceramics, cellophane, painted or smooth surfaces, and for ready removal when desired.

FEATURES — Apply without moistening. Will not pop off despite humidity and temperature changes, yet peel off without harming surface or leaving traces of deposited foreign matter. Adhere firmly to rounded or flat smooth surfaces despite refrigerated temperatures or heat of autoclaving. Quickly and easily applied.

DESCRIPTION — Improved by recently-developed Hi-Tak adhesive. Dispensed individually, ready for immediate application without moistening, by means of a semi-automatic dispensing method. Also available mounted in multiple rows on flat glassine sheets; these are easily fed through a typewriter or marked by hand. Plain or printed to user's specifications in any size, shape or color.

SOURCE — Made by Avery Adhesive Label Corporation, Dept. CP, 36 W. Union St., Pasadena 1, Calif. . . . or for more information check CP 4933 on handy form, pages 2 and 3.

Gives Fire Alarm, Cuts Power, Shuts Doors, Applies CO²

System is also useful for rotating electrical units needing sustained CO₂ discharge

USES — Carbon dioxide fire extinguishing system for Class "B" and "C" risks, where localized or total flooding is necessary.

For rotating electrical units requiring sustained discharge of carbon dioxide.

FEATURES — Versatile and flexible as to fire risk requirements. Should risk increase after installation, more cylinders are quickly added. Easily serviced and installed.

DESCRIPTION — In case of fire, system first sounds alarm, permitting exit of personnel from the fire area. It then automatically shuts off power units, closes windows and doors, and discharges fire-killing carbon dioxide.

SOURCE — American-LaFrance-Foamite Corporation, Dept. CP, Elmira, N. Y., is the maker . . . or for more information check CP 4934 on handy form, pages 2 and 3.



Its advanced design permits use of larger shafting and equipment, requires less shaft extension and provides a neater, more compact installation. Other design refinements make it the most economical coupling to buy and use. Write for details on all popular types.



When inquiring check CP 4935 on handy form, pgs. 2-3



When inquiring check CP 4936 on handy form, pgs. 2-3

which inquiring enter Cr 1991 on many room, F897 2

HILCO OIL RECLAIMERS

For Complete Removal of Solids, Moisture and Gases From New and Used Lubricating and Sealing Oils.

- For Vacuum Pumps
- For Absolute Low Pressures
- For Refrigeration Unit Charging Lasting Lubrication

Saue Money - Oil - Equipment

Complete HILCO Vacuum Pump Lube and Sealing Oil. Continuous Purifying System Plans Available

Let us show you how to deliver pure oil to refrigeration units with a HILCO charging system.

Write for Free Literature

HILCO Oil Reclaimer Model B-1

THE HILLIARD CORPORATION 207 W. Fourth St., Elmira, N. Y.

When inquiring check CP 4932 on handy form, pgs. 2-3

Limit Switch Housing Features New Design Rotary Actuator

Rotary-action lever arm adjusts through 360° with 90° total travel either direction



New-type limit switch housing

USES — Newtype switch housing and basic switching element for all types of industrial limit switch applications.

FEATURES — Provides protection against dirt, dust, moisture and the occasional splash of liquids. Permits four position mounting on either face. New design rotary actuator.

DESCRIPTION
— Actuator is a rotary - action lever arm with roller. Arm is adjustable through 360° with total

means, conduit connection and convenient mounting for travel of 90° in either direction. Unit provides actuating basic switching element enclosed.

Housing is sealed except where actuator shaft enters housing. Long actuator shaft bearing. Conduit fitting has standard ½"-14 NPSM internal threads. Symmetrical mounting holes allow four position mounting on either face with No. 8-32 screws into tapped holes from back, or with No. 6-32 screws through housing and cover.

Operating force, 4 to 12 ozs.; release force, 2 oz., min.; pretravel, 10 to 30°; movement differential, 1° max., or 0.027" max. at roller; overtravel, 55° min.

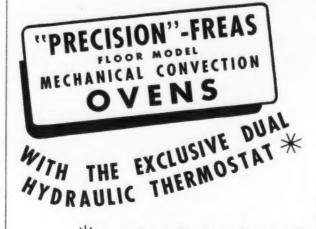
SOURCE — Development of Micro Switch, Dept. CP, Freeport, Ill. . . . or for more information check CP 4937 on handy form, pages 2 and 3.

Centrifugal Separator Solves Boiler Blow-down Disposal Problems

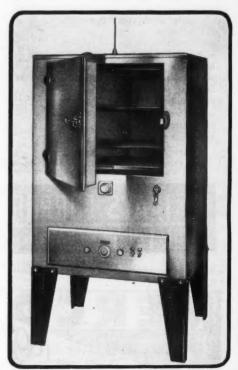
Solution for boiler blow-down disposal problems is offered by a 4-page, illustrated bulletin describing a centrifugal blow-down separator. Includes discussion and recommendations on boiler blow-down piping arrangements and separator installation dimensions.

Literature is slanted toward operators of small and medium boiler plants who cannot discharge blow-down sludge and water directly to sewers without arrangements for venting flash steam. Bulletin 30, issued by Wilson Engineering Corporation, Dept. CP, 122 S. Michigan Ave., Chicago, Ill. When inquiring specify CP 4938 on handy form, pages 2 and 3.

A Record of Productivity unequalled by any comparable Equipment.



An exclusive "Precision"-Freas development, the Dual Hydraulic Thermostat consists of two complete control systems---The Master, which operates the cabinet under all normal conditions; and the Auxiliary, which is activated only when the master system becomes inoperative. This extra, double protection, against thermostat failure is unquestionably the most important advance in positive temperature control in the past forty years.



Pioneered by "Precision"-Freas these features have built an enviable reputation in laboratories everywhere . . .

- Mechanical convection heat transfer, which conveys heat to the load by means of a heavy duty turboblower. Velocity of air current can be regulated as desired. Provides peak loading, accelerated heat transfer, greater productive capacity and extremely accurate temperature control.
- All metal, double walled, welded construction on structural steel framework provides added strength, and ability to take abuse.
- Walls and door insulated with a heavy blanket of glass wool, the ideal thermal insulating material, cuts current consumption, lowers operating costs.
- Door extends the entire width and height of working chamber. Allows full utilization of working space.
- Thermostats have fully enclosed snap-action, silver contact points. Continuous, welded heater bank, operates at black heat, not incandescence.
- 6. 5 year written guarantee covers Thermostats and Heater Bank.
- Dual Hydraulic Thermostat provides double protection—an extremely important factor in long-run constant temperature tests.
- Available in a variety of standard sizes. Two temperature ranges, 180° C maximum and 260° C maximum. Exteriors rust resistant iron finished in aluminum; polished stainless steel exterior furnished at slight extra cost.

Greatly improved deliveries on most models!

Purchase From Your Laboratory Supply Dealer

Write for Catalog 330 D.

Precision Scientific Company Scientific Research and Production Control Equipment . . .

42-48



REMOTE INDICATION OF RATE OF FLOW

For practically all liquidstar, molasses, crude oil, grease. paint, varnish, syrups, etc., etc. -for measuring, indicating, totalizing flow of water and chemicals in continuous manufacturing processes and numerous other uses. Its remote indicating feature is new-get the complete story.

SEND FOR BULLETIN 46-766





When inquiring check CP 4940 on handy form, pgs. 2-3

Processing Equipment

Air Diffuser Adjusts at Turn of Knob; Speeds CFM Readings

Quickly-installed units can be remote or manually controlled; heat, cool, ventilate

USES - New type adjustable air diffuser for instantly producing different air-flow patterns ranging from draftless diffusion to downward projection, without affecting air resistance.

For neutralizing the effect of local sources of heat-gain or loss, or the effect of air distribution problems caused by beamed ceilings, nearby walls or columns. For mounting flush to ceilings or on exposed duct work. For heating, ventilating or cooling in any combination. FEATURES - Provides desired air-flow pattern at the turn of a knob. Facilitates taking of direct CFM readings. Air-flow pattern may be modified to meet changing conditions of room occupancy or seasonal weather variations. Easily adjusted, quickly installed.

DESCRIPTION - Adjustment can be accomplished by remote or manual control, or pneumatically-operated control equipment can be used to adjust any number of units simultaneously. Turning a knob varies vertical position of the third cone, producing different air-flow patterns.

Utilizes Anemostat aspiration principle which draws room air into device, mixing it with supply air. Amount of air drawn into outlet depends on adjustment setting and varies from 15 to 35%. Latch-like method of fastening inner assembly to outer cone saves two-thirds

PRECISE CONTROL FROM 350° to 2000°

- WITH NEW TEMCO

ELECTRIC FURNACE The new MODEL CE A has been designed to

give superior performance, with ease and economy of operation, at a low initial cost. It will stand hard use and is an ideal furnace for general laboratory pur-poses, hear-treating and small unit production.

SPECIFICATIONS
Temperature Control — Any temperature from 500° F, to 2000° F, can be selected and automatically maintained with TEMCO variable temperature control.

Pyrometer — Indicating type calibrated in both Fahrenheit and Centigrade scales.

Dimensions—Inside 43/4" wide, 41/4" high, 6" deep. Outside 12" wide, 151/2" high, 141/2"

deep.

Prices Model CEA Complete For 115 V.—A.C. only...\$80.00 For 115 V.—A.C. & D.C. 85.00 For 230 V.—A.C. only... 85.00

- · Heating element, special high temperature alloy, completely surrounds heat-ing chamber assuring the most uniform distribution of heat.
- Embedded heating element protected against damage and chemical deterioration. • Insulated with highly efficient, light-weight materials cast permanently into fur-nace body. Muffle core easily replace-

Other sizes available

See your supply house or write for literature

THERMO ELECTRIC MFG. CO. 476-4 W. Locust St., Dubuque, Ia.

When inquiring check CP 4943 on handy form, pgs. 2-3



The acceptance of Mercoid Controls is universal. The reason is based on their record for dependable operation and long service. They are easy to install, adjust, and require practically no attention.

The hermetically sealed mercury switches used in all Mercoid Controls are dust, dirt and corrosionproof, thus assuring positive performance under all operating conditions.



Pressure Control—For var-ous industrial applications. The operating range is plainly indicated on a visible dial. Ad-



Temperature Control - For erating range is plainly indi-cated on a visible dial. No

See catalog No. 600 for complete information on all types of Mercoid Controls.

THE MERCOID CORPORATION

When inquiring check CP 4941 on handy form, pgs. 2-3



These are typical results from the FASTER and MORE UNIFORM HEAT maintained at dryers, presses, melters, etc. by the Cochrane C-B System of High Pressure Condensate Return. Results like these are only possible in a CLOSED SYSTEM where flash loss and entrained air are completely eliminated from coils and piping.

Write for Publication 3250

COCHRANE CORPORATION 3162 N. 17th Street, Phila. 32, Pa.



ONDENSATE OOSTER SYSTEM

OF HIGH PRESSURE, HIGH TEMPERATURE CONDENSATE RETURN When inquiring check CP 4942 on handy form, pgs. 2-3



with COMPLETE Speed Control

PALO DIRECT DRIVE STIRRER PALO DIRECT DRIVE STIRKER
One of the most powerful laboratory
stirrers available—a sturdy, direct drive
stirrer offering the power and stamina
necessary for the heavier stirring applications. Can be used for many semiindustrial jobs.



• Heats up to 1500° F. in 40

Can be operated continuously up to 2000° F.

- Table-top speed control rheostat.
- 0 to 5000 RPM
- 5/16" true running chuck.
- Continuous duty. Stainless steel
- mounting rod. Used with any
- laboratory support. • 110 volts, AC-DC.



MODEL 7605E

This is just one of our complete line of high quality laboratory stirrers—of all kinds, for all purposes. Tell us your needs. We will be glad to advise you.

OUR NEW CATALOG DIGEST IS NOW READY. Write for your copy today!



When inquiring check CP 4944 on handy form, pgs. 2-3

BARBER-COLMAN



MICRO SYSTEM FOR PROCESS CONTROL

MICROTHERN

By using a solenoid-loaded contact tongue, with the pull of the solenoid governed by a rheostat on the valve motor shaft, the Microtherm is able to position the Proportioning Valve so as to satisfy exactly any change in demand. Features include simple construction, no relays, and maximum power at all points of valve stroke. "Hunting" is eliminated and the valve is positioned quickly with "micrometer accuracy." Write for Bulletin "CONTROLS FOR INDUSTRY."



PROPORTIONING

BARBER-COLMAN COMPANY

When inquiring check CP 4945 on handy form, pgs. 2-3

FLOAT BOXES and CONTROL VALVES

- 1. LEAKPROOF. Thanks to the exclusive Davis "Dia-Ball" packless transmission unit. The safe way to handle volatile liquids.
- 2. SMOOTH OPERATING. Sealed, flexible joint. No packing nuts to tighten. No packing to replace. Minimum friction; increased sensitivity.
- 3. SIZES. Control valves from ½" to 8". Float boxes with 6", 8", or 10" floats. "Packless" construction for pressures to 250 p.s.i.; temperatures to 300° F.



(LEFT) Davis No. 161D "Packless" Float Box with No. 66B "Packless" Control Valve.

Write for Bulletin.

DAVIS REGULATOR CO. 2562 S. Washtenaw Ave., Chicago 8, III.



DAVIS REGULATOR

When inquiring check CP 4946 on handy form, pgs. 2-3

Processing Equipment

installation time, manufacturer reports, and since inner cone assembly is instantly removable, direct CFM readings are readily taken in neck of unit. This greatly reduces time required to balance the system.

SOURCE — Literature describing Type C-1 Anemostat is provided by manufacturer, Anemostat Corporation of America, Dept. CP, 10 E. 39th St., New York 16, N. Y. . . . or for more information check CP 4947 on handy form, pages 2 and 3.

Mixes and Sprays Hose-water and Quaternary Ammonium

1-qt. container treats 160 gals. hose-water at ratio of 1 oz. to 5 gals.; destroys bacteria



Cleansing-sterilizing spray gun

USES — Hoseoperated gun for applying cleansing and sterilizing compounds of the quaternary ammonium type, mixing them with hosewater in predetermined proportions.

For destroying bacteria.

FEATURES — Sturdy, practical, and easily handled without un-

necessary waste of solution. Dual purpose, being readily adjustable for both cleaning and sterilizing in prescribed proportions. Compounds are highly germicidal.

DESCRIPTIONS — Quaternary-type compounds destroy bacteria with chlorine-like efficiency. Odorless, tasteless and non-corrosive, they are efficient in cold water with little or no scrubbing, particularly when applied under friction or force, as when introduced through hose-water at pressures of 25 to 65 lbs. per sq. in.

Gun is made of light-weight metal alloys and lucite, so constructed that it normally feeds 1 oz. of compound to 5 gals. of hose-water. Ratio of mix is regulated by metering valve at top of pistol-grip handle. Chemical chamber holds 1 qt., which is said to be sufficient to treat 160 gals. of hose-water at ratio mentioned. This is the prescribed ratio for cleaning.

Diaphragm bag in lucite chamber prevents dilution of compound. After soil is removed, cleaned surfaces are sprayed with a concentrated mixture of the compound. For this purpose, nozzle is closed-down to a fine spray or mist. Feed control valve is then opened in order to load mist with the solution. Compound is fed only while trigger is depressed.

Where water pressure is only about 30 to 40 lbs., it is usually necessary to unscrew metering valve somewhat in order to maintain 1-oz.-to-5-gal. feed ratio, manufacturer advises.

SOURCE — Developed by Wilson Chemical Feeders, Inc., Dept. CP, 205 Clinton St., Buffalo 5, N. Y.... or for more information check CP 4948 on handy form, pages 2 and 3.

Say goodbye TO PIPE WRENCH TROUBLES

wrench housing repair cost—at all—ever!

• REDID's unconditional guarantee protects you forever from wrench housing expense and bother. And that's not all. The powerful I-beam handle, instant action non-slip jaws, handy pipe scale on hookjaw and free spinning adjusting nut all make for faster, easier work . . . saving both effort and time. Millions of enthusiastic users specify protection wrenches. You'll prefer them, too. Sizes from 6" to 60" available at your Supply House.





When inquiring check CP 4949 on handy form, pgs. 2-3

FLUIDOMETER



Complete Jacketed **Pipe Systems** For All Liquid **Handling Problems**

used for years for metering noncorrosive materials, is now available in special metals-including stainless steel-for use where corrosive conditions prevail. FLUID-OMETER accurately batches any liquid-either light or heavy-that does not contain abrasive solids and that can be handled through a pipe. We welcome inquiries on fluid batching problems for corrosive as well as non-corrosive liquids. Ask for Bulletin F-46.



HERINGTON & BERNER INC

711 KENTUCKY AVENUE . INDIANAPOLIS 7, INDIANA

When inquiring check CP 4950 on handy form, pgs. 2-3

MAKE YOUR FOR ALL OVENS AND FURNACES Used in 84 varied industries including metal heat treating and smelting, food processing, ceramics, chemicals, textiles and plastics. No more loss and delay from gas shutoffs or varying pressures. Instant change to and from gas. Greater safety VAPORIZES FUEL OIL Does not atomize it. Gives clean, blue flame - no sool or contaminating odors. Constant pressure and fuel-air ratio automatically maintained from oxidizing to reducing flame. Less scale on ferrous work. Quicker and more uniform heat penetration and increased production speed.

VA	DO	CIR	· n	60	DD
VA	PU		= PC	LU	KP.

SEND MORE FACTS ON VAPOFIER

10314 S. Throop St. Chicago 43, III.

NAME	
ADDRESS	

CITY..... STATE..... When inquiring check CP 4951 on handy form, pgs. 2-3

Processing Equipment

Pressure Switches Control Welding, Machine Tools

Bellows and piston-actuated types range up to 1000, 3000 psi, 300 impulses per min.



Pressure control switch

USES - Pressure switches for use in control circuits of welding equipment, machine tools and high pressure lubricating systems. For wide-range, diversified applications in controlling pneumatic or hydraulic machines.

FEATURES -Tests confirm operating rates up to 300 per min. without false operation or flutter, manufacturer reports. Construction assures positive quick-make, quick-break action.

DESCRIPTION — Bellows-actuated types in ranges up to 1000 psi; piston-actuated controls for hydraulic use with pressures up to 3000 psi.

Precision single-pole, double-throw snap-switch mechanism. Separated, non-overlapping normally-open and normally-closed circuits with double-break silver contacts. Snap-switch mechanism itself is enclosed in molded case of non-carbonizing melamine. Drip-tight, oil-resistant switch enclosures are die cast aluminum with recessed mounting-holes sealed off by cover gaskets. Exterior mounting lugs or straps are eliminated.

Observation of switch action is facilitated by trip indicator located behind window in cover. Indicator flag aids proper setting of trip-point, immediately indicating any pressure surge or objectionable condition. Operating point adjusts externally by screwdriver, or an adjusting knob can be furnished. Class 9012 industrial pressure switches, types ACW and ADW.

SOURCE — Made by Square D Company, Industrial Controller Division, Dept. CP, 4041 N. Richards St., Milwaukee 12, Wis., . . . or for more information check CP 4952 on handy form, pages 2 and 3.

Sewage Treatment Reduces Stream Pollution; Bulletin Describes Equipment and Uses

Flocculating equipment, circular clarifier and thickeners, hydro-classifiers, rectangular clarifiers, and automatic backwash rapid sand filters are schematically represented. Applications are noted. Listing of typical industrial wastes from plants as steel mills, paper mills, textile mills and dye manufacturing is presented.

Issued by the Hardinge Company, Inc., Dept. CP, York, Pa. When inquiring specify CP 4953 on handy form, pages 2 and 3.

CONTAMINATION OOO

WHEN ARIDIFIER PITCHES AGAINST COMPRESSED AIR CONTAMINATION





"Riddy" wins the game for you by striking out moisture, dirt, and oil from compressed air lines . . . protects your pneumatic tools, sprayed finishes, sand blasting equipment. Shown here is a typical Aridifier installation . . . keeps air clean and dry through positive centrifugal force. Guard against costly air contamination with an Aridifier-no baffles or filters; stays clean. Send for Bulletin 147.

Logan Engineering Company 4900 Lawrence Avenue, Chicago 30, Illinois





When inquiring check CP 4954 on handy form, pgs. 2-3





SEND FOR-your copy of Bulletin 462.

LESLIE CO.

281 Grant Ave., Lyndhurst, New Jersey

PRESSURE REDUCING VALVES . . PRESSURE CONTROLLERS PUMP GOVERNORS . . . TEMPERATURE REGULATORS

SELF CLEANING STRAINERS . . LESLIE-TYFON WHISTLES

When inquiring check CP 4955 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

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rifugal ir con-

Packaged Humidifiers Control Automatically

Connect to electrical circuit, air and water lines

USES — Self-contained humidifier for connection to air line, water line and electrical circuit. For maintaining relative humidity.

FEATURES — Complete, compact, and economically installed.



Self-contained humidifier

DESCRIPTION — All essential parts, consisting of 4 humidifying nozzles, water tank with float valve, water strainer, air filter, air regulator with pressure gauge, and solenoid-operated valve, are contained in cabinet 13-7/8 x 143/4 x 6" deep.

A humidistat for automatic control is included as a part of, but separate from, the cabinet-unit. Installation of both cabinet and humidistat can be made where desired.

Standard equipment includes 4 nozzles with atomizing capacity of 35 lbs. water per hr., using 5 cfm atomizing air supplied at 32 psi. Also supplied in smaller capacities where specified.

Nozzles are individually adjustable for position in cabinet so that sprays may be directed where required.

Full information on spray nozzles contained in Catalog 22.

SOURCE — Product of Spraying Systems Company, Dept. CP, 4037 W. Lake St., Chicago 24, Ill. . . . or for more information check CP 4956 on handy form, pages 2 and 3.

For more information on product at right, specify CP 4957... use information request blank between pages 2-3.

Meet that Great Explorer ...the Multiwall Paper Bag!

Here's a way of packaging that's not confined to products where bags are taken for granted. St. Regis Multiwalls branch out, move into all sorts of new fields! They adapt themselves to all sorts of products where you might not think of paper as the standard container.

And wherever multiwalls go, they offer more economical, more efficient, and more sanitary packaging.

If you have a product that could conceivably be packaged in multiwall paper bags — anywhere up to 100 pounds — talk it over with one of our offices. They will tell you about differences in construction and closures. They will tell you, too, about specially designed bag filling equipment.

Over 400 products are now using multiwalls — and the end is nowhere in sight!





CH3CI+Mgether CH3MgCI with ANSUL Methyl Chloride

YIELDS—excellent, better than 90%.

REACTION-Proceeds smoothly, rapidly, and is easily controlled.

APPARATUS—simple and inexpensive.

ANSUL CH3CI-Now a low cost chemical due to greatly expanded production facilities.

MAGNESIUM—readily available and now relatively inexpensive.

CONCLUSIONS—excellent yield, smooth reaction, inexpensive methyl chloride and magnesium... make a Low Cost Grignard Reagent.



PHYSICAL PROPERTIES

Chemical formulaCH ₃ Cl
Molecular weight50.491
Color (gas or liquid)Colorless
OdorEthereal, non-irritating
Melting point144° F. (-97.6° C.)
Boiling point10.65° F. (-23.7° C.)
Critical temperature 289.6° F. (143.1° C.)
Critical pressure 969.2 lbs. per sq. in. abs.
Solubility Methyl chloride in wa-
ter-3 to 4 volumes methyl chloride
vapor in 1 volume of water at ordi-
nary temperatures and atmospheric
pressure-methyl chloride in alco-
hol—readily soluble
Specific gravity of liquid909



Send for Bulletin No. 900, "Preparing Methyl Grignard Reagent with Methyl Chloride"...and for "Liquid Methyl Chloride"-a treatise on the properties and general handling of Ansul Methyl Chloride.

CHEMICAL COMPANY

INDUSTRIAL CHEMICALS DIVISION, MARINETTE, WIS. 60 E. 42nd St., New York - 535 Chestnut St., Philadelphia

When inquiring check CP 4958 on handy form, pgs. 2-3

Processing Equipment

21 and 36" Hand Torches Cut Stainless Steel

Economical units have 90° torch heads, automatically-coordinated flux feeds

USES - Hand torch for cutting stainless steel. For all types of mill and shop operations.

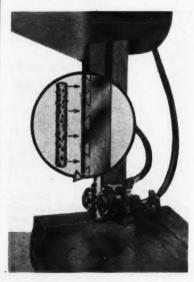
FEATURES — Eliminates separate flux control. Economical. Easily operated. Designed for long service. DESCRIPTION - Available in 21 and 36" lengths, both with 90° torch head. Similar in many respects to manufacturer's Series 9000 cutting torch, and standard parts are often interchangeable.

Durable monel metal head. Rigidity and heat-resistance are enhanced by 3 stainless steel tubes, the third carrying cutting oxygen and flux. Stainless steel lever and ribbed handle. Remote control cut-off automatically coordinates flux feed with cutting oxygen. Employs manufacturer's flux-injection process.

SOURCE - A development of Air Reduction Sales Company, Dept. CP, Dept. 1662, 60 E. 42nd St., New York 17, N. Y. . . . or for more information check CP 4959 on handy form, pages 2 and 3.

Contour-cuts Vitreous, Hard Metals Direct from Layouts

Diamond-impregnated bandsaw teeth eliminate "limited machinability"; slice small radii



Band saw and basic tooth design

USES - For direct contour cutting of vitreous and hard metals and materials, including hardened steel, tungsten carbide, stone, glass, ceramics, granite,

In tests, pieces of tungsten carbide up to 1" thick were cut at rate of 1/20 sq. in. per min., while a hardened steel die 3/8" thick was cut at 1/10 sq. in. per min., manufacturer reports.

FEATURES -Cuts directly to

layout line with precision comparable to conventional contour sawing. Permits salvage of removed material, as in the case of valuable metals and minerals. Eliminates the shaping of material to desired form by multiple cuts or successive rough and finish contour grinding.

Gives increased cutting capacities formerly restricted to very large diamond-impregnated discs or mud saws. Close dimensional control and fine finish. No vibration or fluttering in bandsawing. Permits stacking and clamp-

We'll help you engineer the correct pump to your application

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Plan with Peerless FOR unbiased PUMP RECOMMENDATIONS

FOR MOST SERVICES IN ALL INDUSTRIES

> Peerless manufactures pumps in both vertical and horizontal types for most services in all industries. Bulletins describing individual applications of each of these types of pumps are available on request.

PEERLESS PUMP DIVISION

FOOD MACHINERY CORP.

Factories: Los Angeles 31, Calif., Quincy, Ill.; Indianapolis, Ind. District Offices: Chicago 40, 4554 N. Broadway, New York 5, 37 Wall St., Alfanta Office: Rutland Bldg, Decotur, Georgia; Dallas 1, Texas; Fresno, Calif., Los Angeles 31, Calif. Distributors in all Principal Cities

When inquiring check CP 4960 on handy form, pgs. 2-3

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ing thin materials to cut duplicate parts in one operation. Circles cut in 1" glass, similar materials, are said to be cut quickly, cleanly, free from stress.

Eliminates handicaps of limited machinability, permitting more extensive, economical use of hard, vitreous metals and materials.

DESCRIPTION — Machine employs diamond-impregnated tooth saw band with flushing coolant. Many variations in basic tooth designs can be made to meet specific cutting problems. Teeth are cylindrical segments consisting of diamonds tightly bonded in a sintered tungsten alloy matrix.

Segments are electronically brazed to each tooth, and teeth are designed to minimize stress concentration detrimental to long flex life of band and reduce flexation stresses within individual segments. Construction of segments makes possible the use of a large variety of diamond bonding matrices. Spacings between teeth and saw gullet are designed to trap adequate coolant.

Although manufacturer recommends feeding with smooth, uniform pressure (5 to 6 lbs. on glass 1" thick) for best surface finish of straight or normal contours, yet it is possible to do a small amount of lateral or sidewise cutting not possible with conventional methods. This is advantageous in negotiating small radii. Brittleness, irregularity of shapes often encountered, makes nesting in a wax mold desirable.

The machine itself has 16" throat depth, 10" work-thickness capacity. A 24" square box-type work table tilts 45° to right, 10° to left, front and rear. This is fitted with splash guards. Drain troughs, coolant pump and reservoir are provided, also 1 set of special saw guides and blade wipers. A 2 hp drive motor operates on standard 220/440 voltage, 50/60 cycle current. Variable drive delivers stepless cutting speeds of 3000 to 8000 fpm, shown on tachometer-type speed indicator. Blade is fully guarded to point of work.

SOURCE — A product of The DoAll Company, Dept. CP, Des Plaines, Ill. . . . or for more information check CP 4961 on handy form, pages 2 and 3.

Store Combustible Waste In 7, 9, 12 and 15-gal. Cans

Rugged foot or manually-opened designs win Underwriters' endorsement

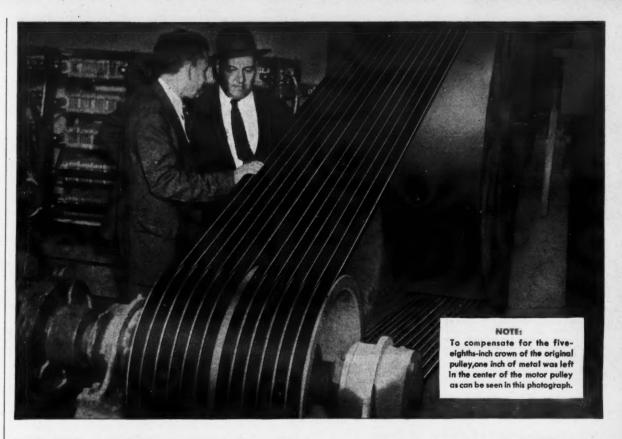
USES — Safety cans for storing oily rags and combustible waste, similar inflammable materials.

FEATURES — Approved by Underwriters' Laboratories.

DESCRIPTION — Foot-pedal and manually operated models in 7, 9, 12 and 15-gal. capacities. Cylindrical body extends to floor. Recessed, soldered bottom. Strong carrying handle is riveted to body as well as lid. Heavy circular beading at top and bottom. All heavy gauge, rust-proof, zinc-coated steel construction.

Step-on models have double operating arms to equalize pressure and minimize strain on hinge when pedal is depressed. Concealed pedal-operating mechanism prevents distortion. Bronze-bushed levers prevent corrosion and "freezing."

SOURCE — A product of The General Detroit Corporation, Dept. CP, Detroit 7, Mich. . . . or for more information check CP 4962 on handy form, pages 2 and 3.



POWER PLANT EXPENSE REDUCED OVER \$3,000 ANNUALLY

Boilers and machinery in the power plant of a large Central Ohio clay products manufacturer were badly in need of repairs. To replace worn-out equipment called for large capital expenditures and even with new equipment, estimated operating expenses loomed large. The manufacturer turned to his local Dayton V-Belt Distributor for suggestions. He recommended replacing the original prime mover with a 250-HP electric motor. This eliminated the necessity of replacing and operating the worn-out boilers. Further, though only 13 feet of floor space were available, the

made use of the original, flat, 8-foot-diameter pulley without removing the %-inch crown.

In the first year of operation, the new motor and drive reduced power plant operating costs over \$3,000!

Your own local Dayton V-Belt Distributor can give you similar help with your power transmission problems. With his specialized knowledge he can eliminate nearly 95 per cent of all power drive troubles using standard Dayton V-Belts and the power drive accessory equipment he stocks. If necessary, he can quickly secure the aid of a Dayton power transmission specialist. So, for



When inquiring check CP 4963 on handy form, pgs. 2-3

ıs

SUPER-SILVERTOP?

"Put a Super-Silvertop Steam Trap on that kettle! You'll be saving as many as 9 fittings and as much as 60 minutes of installation time!" Savings like that on each trap you install are "not to be sneezed at." Today fittings are hard enough to find for the places where they are really needed so why waste them?

Of course, there is more to choosing a steam trap than just how many fittings it takes. For instance, long service life, higher capacities, lower initial cost, neater installations-all these advantages and many more are reasons for installing only Super-Silvertop. Can we tell you more?



THE V. D. ANDERSON COMPANY 1954 West 96th Street Cleveland 2, Ohio

When inquiring check CP 4964 on handy form, pgs. 2-3

Processing Equipment

Underfloor Electric Ducts Use 1-1/2" Pipe-Threaded Outlets

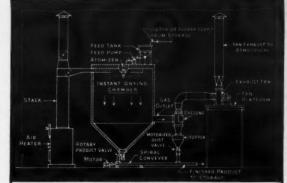
Systems handle high low potentials; also furnished with 2-3/8" T-type quilets

USES - Underfloor electric duct systems. Especially. useful for industrial installations where conduit nipples are used in a run to the disconnect switches or to machinery splice boxes. For high or low potential light and power connections.

Low potential service fittings are, for example, designed for telephone, communication or similar wiring, and can accommodate terminal blocks, buzzers, bells and other small signal devices.

FEATURES - First time that a 1-1/2" standard pipe threaded outlet has been available commercially in underfloor duct, manufacturer reports. Use of steel for permanence is said to assure improved grounding for safety. Installation requires no special tools. Simplified "Nepcoduct" system is approved by Underwriters Laboratories.

DESCRIPTION — The 1-1/2" standard pipe threaded outlet has actual inside diameter of 1.910", with steel wall thickness to permit standard pipe thread of suffi-cient length for good mechanical and grounded connec-tion. The course threads permit desirable tolerances with assurance against thread stripping. Marker screws, omitted from duct assembly, are available when desired. System incorporates a single size 14 gauge steel underfloor duct, 1-3/8 by 2-7/8", furnished in 10' lengths with



LOW COST DRYING with The "INSTANT DRYING" System

· Less power and a smaller connected load required.

Large capacity, rugged construction.

 Requires a minimum of labor and attention (one man can supervise the operation of a battery of several Instant Drying units per shift).

Many of your industrial colleagues have proved the savings that can be secured through the use of THE INSTANT DRYING SYSTEM. Write to us on your drying problem. We shall answer your questions and send you detailed literature on THE INSTANT DRYING SYSTEM.

INSTANT DRYING CORPORATION

101 Park Avenue, (D) New York 17, N.Y.

Testing and Research Laboratories at Poughkeepsie, N. Y. Engineering by CLARK, MacMULLEN & RILEY, INC., New York

When inquiring check CP 4967 on handy form, pgs. 2-3

PALO TIME SWITCH Sr.

Our New Catalog Di-gest is now ready! Write today for your copy.





The PALO TIME SWITCH Sr. is a completely self-contained unit incorporating the necessary equipment to turn on or off any type of electrical laboratory apparatus on a predetermined time schedule.

20 AMPS non-inductive or 1 HP motor load

Write for Bulletin 2404 W.

PRICE

§37.50

PAIQ-MYERSING 81 READE STREET NEW YORK 7, N.Y

When inquiring check CP 4965 on handy form, pgs. 2-3 When inquiring check CP 4966 on handy form, pgs. 2-3



If the pressure is on in your laboratory trying to control quality and uniformity — then install an "Anets" Automatic Electric Laboratory Cabinet. Just a turn of the dials to produce any weather or testing condition from room to 140° F. temperature — and up to 93% relative humidity. Fully Automatic and all-electric operated. Super-sensitive controllers maintain any selected condition with remarkable accuracy. Specified and

used by leaders in every industry - electrical, electronic, chemical, plastic,

STAINLESS STEEL CABINET



ANETSBERGER BROTHERS, Inc. 168 N. ANETS DR., NORTHBROOK, ILL.



"LIQUIDS WORTH STORING ARE WORTH MEASURING "

COMPLETE DETAILS

8-18 SKILLMAN AVE., LONG ISLAND CITY, I.N.Y.

When inquiring check CP 4968 on handy form, pgs. 2-3

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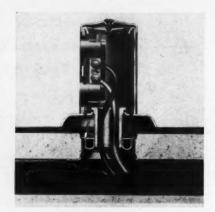
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1-1/2" pipe threaded outlet

either black enamel or Sherardized finish. Improvements include brass service fittings with standard T slot 3-pole or duplex receptacles for high potential connections. Also low potential service fittings, as stated.

Although the standard-size outlet is featured, a 2-3/8" T type outlet is supplied, on special order, for telephone work, other specific applications.

SOURCE - Manufacturer is National Electric Products Corporation, Dept. CP, Chamber of Commerce Bldg., Pittsburgh 19, Pa., . . . or for more information check CP 4969 on handy form, pages 2 and 3.

Vertical Boiler Feed Pumps Are 1/2 to 20 hp, 3450 rpm

Useful as condensate return units and for high water pressures

USES — High-pressure, centrifugal boiler feed pumps for pumping hot water and for other installations requiring high water pressure.

Manufacturer recommends for condensate return units when installed with flooded suction to a receiver and provided with proper controls.

FEATURES - Require minimum floor space for boiler-feed applications, and eliminate need for special foundations or flexible couplings. High efficiency plus low maintenance. Designed for vibrationless operation.

DESCRIPTION — Vertical, multi-stage design, varying in size from 1/2 to 20 hp. Also built to specification. One moving part, and no close clearances. Require no lubrication. Heat from hot water is generally conducted through bracket and shaft to motor. To protect motor windings from excessive heat, there is a heat-radiating flange between pump and motor.

So that heat conducted up shaft will not injure lower motor bearing, it is packed with high temperature grease, resistant to 350°F. Units have 3450 rpm ball bearing motors. Extra-deep packing gland has pressure breaker and return to low pressure stage, reducing pressure against packing. Bulletin JBF-1 contains full

SOURCE — Made by Jacuzzi Bros., Inc., Dept. CP, Richmond, Calif. . . . or for more information check CP 4970 on handy form, pages 2 and 3.



PACE-SETTER IN VALVES

"TAILORS" the TRI

TO SAVE YOU MONEY!

Service		Steam, W	ater or Gas	Oil or Oil Vapor		
Temperature Limitation	nperature 550 °F. "8" Trim*		750 °F. "HCH" Trim	1000 ° F.	850 °F. "C" Trim	1000 °F. "CH" Trim
Stem	Manganese Bronze		13% C	nrome Stainles	Steel	
Wedge (Gates)	Bronze	13% Chrome Stainless	13% Chrome Stainless Hard- ened 500 Brinell	Stellite	13% Chrome Stainless Steel	
Seats (Gates)	Bronze	Nickel- Copper	13% Chrome Stainless Steel	Stellite	13% Chrome Stainless Steel	
Discs (Globes)	Bronze	Nickel- Copper		Stellite	13% Chrome Stainless Steel	
Seats (Globes)	Bronze	13% Chrome Stainless		Stellite	13% Chrome Stainless Steel	
Bonnet Gasket	Asbestos		Corr	rugated Soft I	on	
Bolting	ASTM A261 Grade 80	ASTM A193 Grade B7	ASTM A193 Grade B14	ASTM A193 Grade B14	ASTM A193 Grade B7	ASTM A193 Grade B14

Regularly available in 150 and 300 lbs. valves.
 Regularly available in valves rated 300 lbs. and higher.
 Other trims and combinations of trims for special applications available upon request.

"Tailored trim" in OIC Valves means less wear, longer service with less maintenance. All trim surfaces in OIC Valves are finished to a highly polished smoothness by modern, scientifically designed machinery — shaving friction to the

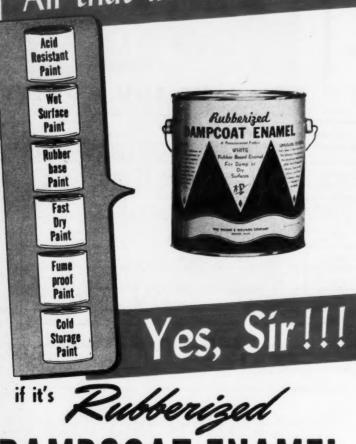
> lowest possible coefficient. Every OIC valve trim is especially made for its particular job! Cut operating costs to a new low with OIC, Pace-Setter in Valves!

GET THE FACTS ABOUT OIC'S "TAILORED TRIM" IN THE BIG OIC 248-PAGE CATALOG And there's plenty of other useful information that you won't want to miss in this handy book. For your free copy, simply write, giving your name, firm and address to The Ohio Injector Company, Wadsworth, Ohio.

STEEL . IRON . BRONZE

When inquiring check CP 4971 on handy form, pgs. 2-3





DAMPCOAT ENA

Here's a really "foolproof" paint! You can use it just about anywhere for general maintenance in chemical and processing plants. Being a Full Rubber Base paint it is completely waterproof and limeproof-making it ideal for concrete or plaster surfaces. Easy to apply-requires no special handling. Available in White, Black, Aluminum and 10 colors. Cut your maintenance worries by standardizing on the one paint that's "got everything!"

- · Dries in about one bour
- · Wet or dry surfaces safely painted
- . Use on concrete, metal, plaster or wood
- · Resists acid spillage and splasbing
- · Non-yellowing, even on steampipes
- · Unaffected by chemical fumes or salt air

· Withstands constant wetness · Fire resistant-Fungus resistant FIRST IN FIRST IN "C-30", Greenleof & Leon Sts., Boston 15, Mass.

When inquiring check CP 4972 on handy form, pgs. 2-3

Processing Equipment

Use Spring Check Valve on Water, Air or Gas Lines

Also used on air compressors; cast from bronze; 1/8, 1/4, 3/8, 1/2 and 3/4" IPS



Spring check valve

USES - Spring check valve for use on air compressors, water, air or gas

FEATURES - Operates with minimum noise and provides a positive non-leaking check to water, air or gas, manufacturer reports. Each is individually tested.

DESCRIPTION — Piston-operated and spring-loaded, Series 1000 valves are cast from high grade bronze, precision-machined. Are available in sizes 1/8, 1/4, 3/8, 1/2 and 3/4" IPS, with screwed ends. Manufacturer reports larger sizes will be available soon.

SOURCE - Made by Pokorney Manufacturing Company, Dept. CP, 3117 Clybourn Ave., Chicago, Ill. . . . or for more information check CP 4973 on handy form, pages 2 and 3.

Heat Process Unit Covers Wider Temperature Range

Use with special heat transfer salt eliminates high working pressures

USES - High temperature heat transfer medium for use by all industrial plants utilizing heat processing.

Designed expressly for use with "Hi-Tec" heat transfer salt, a product of E. I. duPont de Nemours and Company, (Inc.), making use of that product's heat transfer properties in the broad range between flame and steam temperatures.

For catalysts temperature control in manufacturing formaldehyde, phthalic anhydride and other chemicals formed by catalytic reactions at elevated temperatures. Should prove useful in distillation of fatty acids or manufacture of synthetic oils to exact specifications, and is said to eliminate need for direct firing in the manufacture of paints, petroleum products and food. Used with this special heat transfer liquid for which it was developed, it promises to open new fields in precision heat processing.

FEATURES - Eliminates high working pressures and costly equipment, bringing precision heat processing within range of more manufacturers. Fully automatic and self-contained. Easily controls degree of heating. Good coefficient of heat transfer. Low temperature difference advantageous in design of equipment to operate at high temperatures, low pressures. Remote possibility of vapors, toxic fumes.

Should enable producers to increase yields, manufacturer reports. Makes possible safe manufacture of "custombuilt" products to precise specifications. Type of con-

Light Strong Compact **Corrosion Resistant** CLEAR THROUGH



That's PERMANITE

An outstanding feature of Permanite is its adaptability to situations where size and weight are prime considerations. Above, for example, are two absorber towers and a fume washer of Permanite construction. Reinforced with woven fiber glass for added strength and supported with angle iron frames to facilitate handling, these units are lighter and more compact without sacrificing strength, corrosion resistance or operating capacity.

Permanite, a specially compounded furan resin structural material, is resistant to all alkalies, non-oxidizing acids. oil and most solvents, and will withstand thermal shocks and heat to 350°F.

Permanite is made by the manufacturer of Pyroflex and Knight-Ware—an organization with over 40 years' experience in the manufacture of corrosion-proof equipment.

Write today for Permanite literature

MAURICE A. KNIGHT 404 Kelly Ave., Akron 6, Ohio

When inquiring check CP 4974 on handy form, pgs. 2-3

DEMING WATER LUBRICATED TURBINE PUMPS

Why let high water rates wash away part of your company's profits when there may be adequate water within easy reach of a Deming Deep Well Turbine Pump? Savings up to 60% over former water costs have been made by many companies where Deming Deep Well Turbines actually paid for their

cost during the first year of ownership. Your first step is to send for a free copy of BULLETIN 4700-8 which gives facts you ought to have. Write to—

THE DEMING COMPANY
522 BROADWAY . SALEM, OHIO



When inquiring check CP 4975 on handy form, pgs. 2-3

DRUM DE-KINKER AND SEALER

Seals and straightens damaged steel drums quickly and easily. Anyone can operate the tool to stop leakage right on the spot without removing the contents of the drum. A few strokes of the

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SCHINKER

handle at the damage point does the trick.

The "DE-KINKER" handles 16, 18 and 20 gauge drums from 10 to 55 gallon.

Price \$25.00 F.O.B. Chicago

"ALL-PLUG" DRUM WRENCH



An ideal tool for taking out and putting in drain or filler plugs. No mutilation of plugs or operator's hands. Replaces the assortment of gadgets generally used for this purpose. Fits all types of plugs — foreign and domestic.

Price \$7.50 each F.O.B. Chicago

(Discount of 5% on orders for five or more.)

SCHINKER MFG. CO. 6514 So. Western Ave., Chicago 36, III.

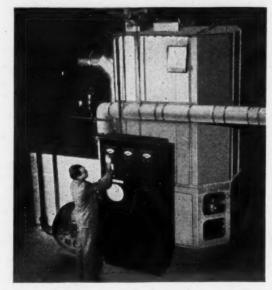
When inquiring check CP 4976 on handy form, pgs. 2-3

Processing Equipment

struction assures minimum accumulation of scale and dirt on heat transfer surface.

DESCRIPTION — Unit consists of a complete furnace with vertical water-tube type boiler, complete with tubes, headers and manifolds for carefully-balanced salt flow and adequate combustion space for optimum salt rates. Units are from 500,000 to 2,500,000 BTU's per hr. in continuous operation at 650° F. Approximate over-all operating efficiency, 50%.

Steam heating coil or electric immersion heater which melts salt for initial operation is located on bottom of sump tank. A submerged salt pump initiates and continues salt flow. Inspection manholes afford easy checking during operations. Two air-operated salt control



"Beth-Tec" unit

valves atop boiler are completely jacketed for steam heating, and have specially designed stuffing boxes.

Ample air for combustion is supplied by proportioningtype oil burner and blower at bottom of furnace. These are equipped with various safety devices. Duplex oil pumps provide oil from user-installed tanks. Instrument and control panel, separate from units, is equipped for "fail-safe" operation under all conditions. Duct-type cables provide interconnecting wiring between panel and boiler unit proper.

Melting as low as 290°F, "Hi-Tec" salt mixture is liquid over a broad temperature range. Pressure is 0 lbs./sq. in. gauge. Specific gravity varies from 1.97 to 1.68 when measured over 300-1030°F. temperature range. Specific heat of solid mixture is 0.32, and that of melt, 0.373 calories per gram per °C or BTU per lb. per °F. Latent heat of fusion is about 20 calories per gram or 35 BTU per lb. Quickly brought into usable working range, it does not vary in viscosity too greatly as temperature increases.

Data sheets giving additional information concerning "Hi-Tec" salt and "Beth-Tec" unit are available. Tested and approved by Lehigh University chemical laboratory. SOURCE — "Beth-Tec" was developed by Bethlehem Foundry engineers in cooperation with E. I. du Pont de Nemours and Company, (Inc.), makers of "Hi-Tec" heat transfer salt. Bethlehem Foundry and Machine Company, Dept. CP, Box 90, Bethlehem, Pa., . . . or for more information check CP 4977 on handy form, pgs. 2 and 3.

MICRO Precision Switches



explosive atmospheres

• Here is a switch that can prevent disaster wherever explosive chemicals, paints, varnishes, starches, pyroxylins, grain dust, or petroleum create a hazard.

It is one of the smallest explosion-proof switches listed by Underwriters' Laboratories. A roller arm actuator with 90° overtravel in either direction, or a plunger actuator with overtravel, fits it for use as safety limit stops, interlocks, and as a control for automatic equipment. Operating point and movement differential are accurately maintained throughout millions of operations.

Underwriters' Laboratories listing... Class I, Groups C and D, and Class II, Group G. Rating... 10 amperes, 125 volts; 5 amperes, 250 volts; 3 amperes, 460 volts, A-C.

For further information or helpful suggestions for uses of MICRO Explosion-Proof Switches, write to experienced MICRO engineers at one of the addresses below.



BRANCH OFFICES: CHICAGO 6, 308 W. Washington St., NEW YORK 17, 101 Park Avenue, CLEVELAND 3, 4900 Euclid Avenue, LOS ANGELES 14, 1709 West 8th St., BOSTON 16, 126 Newbury St.

SALES REPRESENTATIVES: PORTLAND, ORE., 917 S. W. Oak Street, ST. LOUIS 5, 6625 Delmar, DALLAS, TEXAS, Irwin-Keasler Bldg., TORONTO, Ontario, Can., 11 King St.

When inquiring check CP 4978 on handy form, pgs. 2-3

TYPE GRAVIMETRIC FEEDER

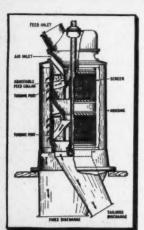
The Omega Belt Type Gravimetric Feeder weighs and feeds dry materials continuously, automatically, on a short conveyor belt carried on sensitive scales. Whether material is fine or coarse, feeding accuracy is maintained within 1%. Handwheel adjustment of variable speed drive gives infinite number of feeding rates from 10 lbs. to 10,000 lbs./hr. (100 lbs./cu. ft. material). Ideal for automatic and proportional feeding where high accuracy is essential. Write for Bulletin 24-27.

OMEGA MACHINE CO.

(Division of Builders Iron Foundry) 41 Codding St., Providence 1, R. I.

When inquiring check CP 4979 on handy form, pgs. 2-3

CENTRIFUGAL SIFTING



SIETER

PRODUCES
Clean, Fast Separation

SAVES
Power and Space

ELIMINATES
Shaking and Vibration

REQUIRES
Less Space • Power • Labor

HANDLES
Any Material • Any Mesh

OPERATES

Quietly - Dustproof

Users Report
"Sifts from 2 to 10 times faster than any other method."

Costs Less to Install
Own and Operate

Get Bulletin 52

ABBE ENGINEERING CO.

When inquiring check CP 4980 on handy form, pgs. 2-3

Processing Equipment

Self-contained Humidifiers Save 90% Cleaning Time

Require no return water line; connect direct to any water line for water supply



Industrial humidifier

industrial humidifier for plant use. FEATURES — Designed to save 90% of cleaning time. Easily installed. Like other models in this line, it requires no steam, no pumps, no compressors. Noiseless and completely selfcontained. Ato-

USES - Improved

mizes moisture in vapor form "finer than cigarette smoke."

DESCRIPTION — Lower pan is completely covered, and air is brought in from bottom through fiber-glass filter. Equipped with hanging brackets.

To install, hang from ceiling and run single water pipe to the unit. Requires no return water line. Automatic controls are included for close regulation of percentages of relative humidity. Vaporization capacity, more than

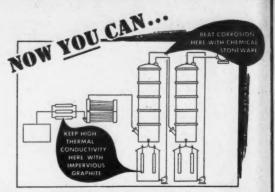
NOW ERASE ELECTRICALLY less effortless timecleaner!

A handy tool in any drafting room, art, statistical, stenographic or accounting department, this new Bruning Electric Erasing Machine assures clean, smooth erasures — operates on 110-115 volts A.C., 50 or 60 cycle. A hollow shaft in the machine firmly holds a 7-inch eraser, eliminates waste and the nuisance of frequent changing. Erasers — soft, medium or hard — are easily inserted in the shaft. An especially designed induction-type motor, mounted in rubber, assures smooth, quiet operation. Precision ball bearings are permanently lubricated. Sturdy yet light in weight, the machine fits the hand comfortably, with control switch button conveniently located for finger-tip control. For complete information, write Charles Bruning Company, Inc., 4706-22 Montrose Avenue, Chicago 41, Illinois.

BRUNING

Since 1897

When inquiring check CP 4981 on handy form, pgs. 2-3



Combine the individual properties of Chemical Stoneware and Graphite...with all equipment from One Source!

"Shopping around" for the right combination of process plant equipment is now a has-been. To meet the tightest demands for corrosion resistance, shock resistance, and thermal conductivity. General Ceramics is now prepared to supply equipment fabricated in whole or in combination from both Chemical Stoneware and Falls Impervious Graphite.

This means: the extreme corrosion proof properties of chemical stoneware to all acids except hydrofluoric

. . . plus the high heat transfer, thermal and mechanical shock resistant properties of Falls Impervious Graphite, economically combined where each is most needed in one process—planned and installed by one company, General Cerámics. Write for complete information, or outline your requirements for specific recommendations and a proposal.



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When inquiring check CP 4982 on handy form, pgs. 2-3



BLENDING AND SORTING VACUUM

This Spencer Vacuum Producer is located between two huge storage tanks on the roof of a large chemical plant. Dried plastic granules are picked up from the trays with a Spencer "Gulper" tool as they come from the ovens. One tray containing 10 pounds of material is emptied in one minute. The plastic is then conveyed by vacuum to the roof, 35 feet above and is separated by the Spencer Centrifugal Separator and then dropped down over vibrating screens.

SPENCER VACUUM... ASK FOR BULLETIN

SPENCER VACUUM

C L E A N I N G

THE SPENCER TURBINE COMPANY, HARTFORD 6, CONN.

When inquiring check CP 4983 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

1 gal. per hr. For water supply, connection is made directly with any water line. 360° or 2 directional or single directional domes can be furnished.

Ball bearing motors draw less than 100 watts per unit, and manufacturer estimates operational cost per unit per month at about 50c. Direct current can be supplied where needed. Constructed of heavy gauge copper or other non-ferrous material. Literature contains additional details.

SOURCE - Manufactured by Abbeon Supply Company, Dept. CP, 58-10 Forty-first Drive, Woodside, New York, N. Y. . . . or for more information check CP 4984 on handy form, pages 2 and 3.

5-25 Gallon Pilot Plant Distillation Units Use Steam, Oil, Electricity

User's specifications determine method of process heating, materials of construction



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356-J

Pilot plant distillation unit

USES - Small distillation unit for pilot plants.

FEATURES - Steam, heated oil or electric processing heat, as per user's specifications.

DESCRIPTION - Unit consists of jacketed reaction kettle, packed column, tubular condenser, jacketed receiver, interconnecting piping and valves. Capacities from 5 to 25 gals. Monel, Inconel, nickel or stainless steel construction.

Agitator and flush-type plug valve discharge process materials from reaction kettle.

Refluxing is provided for.

SOURCE - Alloy Fabricators, Dept. CP, 502 Market St., Perth Amboy, N. J., is the maker . . . or for more information check CP 4985 on handy form, pages 2

16-1/2" Koroseal Sleeves Protect Clothing from Dirt, Splashing

Useful in plant, laboratory and office; easily washed, worn, put on or removed

USES - Protector sleeves for protecting clothing from acids, caustics, solvents, dirt and splashing liquids of all types. For use by plant, laboratory and office

FEATURES — Easily cleaned with soap and water. Light, flexible and non-binding. Easily put on and taken off. Durable and dressy.

DESCRIPTION - Made of Koroseal .0006 gauge film. Length, 161/2", with elastic at both ends. Snug-fitting at top and bottom. Translucent.

SOURCE — A product of the B. F. Goodrich Company, Dept. CP, Akron, O., . . . or for more information check CP 4986 on handy form, pages 2 and 3.



QUICK INSTALLATION — It's a complete, low-cost pumping "package" — ready to hook up and put into service for a wide range of applications. Can be mounted in any position - fits into close quarters. Made

HIGH EFFICIENCY - Pump and motor are engineered and built together as a smoothworking team, and Allis-Chalmers takes undivided responsibility for performance. Every

to handle most liquids, with capacities from 15 to 1400 gpm, heads to 500 ft.

Electrifugal pump is run and tested at the factory for efficiency, capacity and head.

IMMEDIATE DELIVERY - Many sizes of Electrifugal, PEDRIFUGAL and SS UNIT pumps are now in stock at convenient points. Phone or wire your nearest Allis-Chalmers office or dealer for latest information on stocks and deliveries. For description of the complete line of A-C centrifugal pumps, to 600,000 gpm, ask for Bulletin B6059D. ALLIS-CHALMERS, MILWAUKEE 1, WIS.



Electrifugal, Pedrifugal, SS Unit and Texrope are Allis-Chalmers Trademarks.

One of the Big 3 in Electric Power Equipment — Biggest of All in Range of Industrial Products

When inquiring check CP 4987 on handy form, pgs. 2-3



When inquiring check CP 4988 on handy form, pgs. 2-3

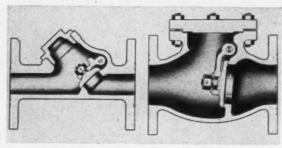
Processing Equipment

1/2 to 6" Swing-check Valves Are Corrosion-resistant

Checks take moderate temperatures, pressures; valves handle up to 150 psi, 350° F.

USES - New lines of corrosion-resistant swing-check valves. Checks are designed for moderate pressures and temperatures usually encountered in piping corrosive fluids. Valves are for liquid or gas working pressures up to 150 lbs. and maximum temperature of 350° F.

FEATURES — In ½ to 2" Y-pattern, seating surfaces can be reground without moving valve body from line.



Swing-check valve

21/2 to 6" straightway type permits full straightway flow with minimum flow resistance and pressure drop. DESCRIPTION - Made both in 18-8 Mo alloy steel and monel metal, in sizes 1/2 to 2" with screwed or



When inquiring check CP 4990 on handy form, pgs. 2-3



for High-Degree Crystal-Clear Filtering of Corrosive Acids

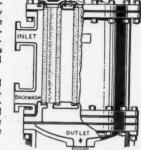
CFR (Rubber-lined)

CFL (Lead-lined)

Adams Filters are com-pletely enclosed for safety yet installation is simple and tubes may be inspected or removed without dismantling. All parts in contact with the acid are inert to its action.

Filter units are easily and speedily cleaned by backwashing, and may be repeatedly cleaned and used for a long period. There is full reclamation of the filtered acid.

Descriptive Circular 303 gladly mailed. A test in your plant of CFL or CFR filters operating under your actual conditions can be



arranged on request.

P. ADAMS CO. INC. 243 E. PARK DRIVE

When inquiring check CP 4991 on handy form, pgs. 2-3



UNFIRED PRESSURE VESSELS

PANY

OHIO

5. 2-3

constructed under A.S.M.E. Code, Par. U-69, for many purposes



Welded "Standard Special" Oil Separator for 28" Vacu

Materials and man-power are now available to devise and fabricate special applications of tank construction.

Many years of experience building A.S.M.E. inspected and approved vacuum and high pressure vessels have qualified our engineers te provide a satisfactory solution to many troublesome problems in this class of construction. All work fabricated by approved welders and produced under A.S.M.E. inspection.

Send Blue Prints or Specifications for Quotations on Your Requirements.



When inquiring check CP 4992 on handy form, pgs. 2-3



for, in addition to the unit itself being far more compact, its shape can be adjusted to fix arous space requirements . . long and narrow, square or wide. You can often unlike waste areas too small for cheef equipment.

IT RECOVERS THE "FINES" ...

IT IS UNUSUALLY ADAPTABLE for, in addition to the shape adaptability, inletoutlet connections are easily
adaptable to meet special installation conditions

17 18 SIMPLE

IT IS SIMPLE both to install and maintain, requires only single inlet and outlet ducts, and a single collecting hopper serves an entire bank of

the MULTICLONE has many advantages? Why limit your dust recovery job to one or two performance features? The many Multiclone advantages-only a few of which are 38 years of specialization in the science of

On any dust recovery job

-large or small-

GET ALL THE FACTS. Send for booklet describing the many Multiclane advantages. Also let our trained engineering staff study your problem and show how Multiclane's savings benefit you. No ablig



When inquiring check CP 4993 on handy form, pgs. 2-3

Processing Equipment

flanged ends, and in sizes 21/2, 2, 3, 4 and 6" with flanged ends only.

1/2 to 2" sizes are Y-pattern body with cap on same center line as seat opening. Large cap opening gives access to internal parts when cap is removed, and slot in end of disc spud permits rotating disc with screwdriver.

Body of 21/2, 3, 4 and 6" sizes is straightway type with seat face at slight angle from vertical. Cap is bolted to body. Seat is cast as part of body, and face is accurately machined to assure pressure-tight seating of disc. When necessary, 2½ to 6" valves can be furnished with outside lever and weight which can be applied either to assist disc in closing, making valve extremely sensitive to reversal of flow, or to balance disc, causing valve to open under minimum pressure.

SOURCE - Crane Company, Dept. CP, 836 S. Michigan Ave., Chicago 5, Ill., is the maker . . . or for more information check CP 4994 on handy form, pages 2 and 3.

Electric Magnet and Receptacle Pick Up, Move Scrap Metal

Detachable 18x96" magnet adjusts for correct height from ground



Combination road-sweeping magnet and receptacle

USES — Combination road-sweeping magnet and dumpbody receptacle for collecting and moving accumulated scrap metal.

FEATURES -Rapid and efficient. DESCRIPTION -

Consists of Stearns 18 x 96" electric magnet with Dempster - Dumpster hoisting unit. Mag-

net detaches by removing 2 pins and the chains from standard Dempster-Dumpster body.

Magnet is adjusted for correct height from ground by raising or lowering boom. Electrical energy is by means of gasoline-motored generator mounted on side of chassis. Switch for current control is convenient to

SOURCE - Product of Stearns Magnetic Company, Dept. CP, Milwaukee 4, Wis. . . . or for more information check CP 4995 on handy form, pages 2 and 3.

Summarizes Recommendations for Concrete Floor Aggregate

Recommendations for good concrete aggregate, with comparative strength analyses, are presented in a 12page, illustrated booklet. Literature summarizes recommendations of "leading cement companies and the Portland Cement Association" and compares them with qualities of manufacturer's natural emery as an aggregate for concrete floors.

Bulletin 701, issued by Walter Maguire Company, Inc., Dept. CP, 330 W. 42nd St., New York 18, N. Y. When inquiring specify CP 4996 on handy form, pages 2 and 3.

FOR TODAY'S TOUGHER JOBS A NEW TOUGHER PUMP!



Model 340 - 11/2" stainless steel (18-8 type 317) pump

Stainless Steel The pump with the RUBBER impeller

A relatively high vacuum pump for liquid transfering and circulating.

VACUUM

Vacuum in excess of 27" of mercury.

PRESSURE

Suitable for operating pressures from 0 to 35 PSI - slightly higher pressure permissible for intermittent or irregular operation.

CAPACITIES

Capacities up to 55 GPM of water at 1750 RPM at 0 PSI.

TEMPERATURES

Temperatures up to 160° F. maximum.

INSTANTLY SELF-PRIMING. Jabsoo's patented pumping action creates a high suction for instant self-priming at all times - at all speeds. They're compact, trouble free pumps that permit cleaner - safer - easier installations.

NEOPRENE IMPELLER. The long life flexible impeller can be replaced in a few minutes without disconnecting the pump from the piping system or removing the pump shaft from installations. The flexible impeller permits the passage of abrasive materials and solids-creates a positive suction-and assures pumping efficiency and carefree performance

GEARLESS — NOISELESS. Jabsco pumps are quiet and efficient in operation. There is no metal action. Factory lubricated and sealed ball bearings insure extra long life. Bearings are adequately protected by ample drain holes and slinger ring.

SELF-LUBRICATED. Flexible rubber neoprene impeller is lubricated by the liquid that is

REVERSIBLE. The Jabsco stainless steel pump operates with equal efficiency in either direction.

Carefully designed and constructed for maximum life and serviceability, Jabsco's new stainless steel pump for chemical and food processing applications is available as standard in either 18-8 stainless steel, or monel metal. Model 340 as described above, is available for immediate deliveries – has port connections for 1½" pipe, at both intake and discharge. Here's a new, sturdy and rugged pump that will honestly give you outstanding performance. For more complete information and application data, write to —

JABSCO PUMP COMPANY 2031 N. Lincoln Street • Burbank, California

When inquiring check CP 4997 on handy form, pgs. 2-3

OLIVITE

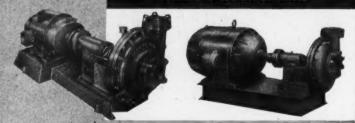
ACID-HANDLING



Centrifugal Pumps -

·Combining High Efficiency

With Protection of Parts



If chemicals were like water, there would be little trouble pumping them in and around a process plant. But they aren't and the pump that is the best buy is one that combines effectiveness of pumping with effectiveness of protection. For this, we recommend our Olivite Acid-Handling Pump.

Hydraulically, it will stand up with the best of pumps. Chemically, it offers distinct advantages. Shaft and bearings are fully protected from the chemicals, Every inch of contact surface is protected by a durably bonded, special rubber highly resistant to practically all acids and to many chemicals, hot or cold.

The sales record of Olivite Pumps is one of "repeat orders." One large plant recently ordered 50 more Olivites to round out a total of about 150 units. Such a pump is likely to do a good job for you, too. Why not find out? Bulletin 308-R will give you the details. In writing for it, tell us about your problem.

Shipment from Eastern or Western Factory!

OLIVER UNITED FILTERS

New York 18, N. Y. 33 West 42nd Street

Sales & Manufacturing Representative: E. Long Limited San Francisco 11 California

Chicago 1, III. 221 N. LaSalle Street Western Sales Division Oakland 1. Calif. 2900 Glascock Street



Factories: Oakland, Calif. . Hazleton, Pa. . Orillia, Canada . Melbourne, Australia

When inquiring check CP 4998 on handy form, pgs. 2-3

Processing Equipment

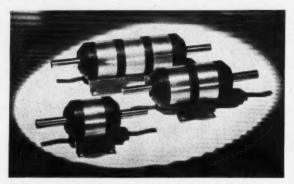
500 Miniature Speed Changers Handle Ratios of 9/10 to 3375

Speeds as high as 20,000 rpm (high speed shaft) and torques of 2 pound-inches (low speed shaft) are practical

USES - Multiple-section miniature speed changers for low-power speed-changing applications requiring high

For applications requiring any of 500 different speed ratios ranging from 9/10 to 3375. Useful both for development applications and as component parts in finished products.

FEATURES - Versatile. Furnished economically on short notice.



Miniature high-ratio speed changers

For many applications, speeds as high as 20,000 rpm (high speed shaft) and torques of 2 pound-inches (low speed shaft) are practical.

DESCRIPTION - Now available in standard 1, 2 and 3 sections with ratios as high as 3375-to-1. Diameter is 1.050". Respective over-all lengths of 1, 2 and 3 sections are 3, 3-7/8 and 4-5/8".

Hardened steel spur-gears throughout. Lubrication permanent for most applications. Concentric input and output shafts are supported in ball bearings.

SOURCE - Development of Metron Instrument Company, Dept. CP, 432 Lincoln St., Denver 9, Colo., . . . or for more information check CP 4999 on handy form, pages 2 and 3.

Mobile Steam Cleaner Cleans, Sterilizes, Sprays or Thaws

Has 90 gph water capacity, 80-120 lbs. normal operating pressure, choice of driving power

USES - All-purpose steam cleaner for cleaning, sterilizing, spraying and thawing operations.

Cleans machinery, walls, conveyors, motors, vats and tanks, hand and electric trucks, bins, cookers, mixers, kettles, refrigerator cars, reservoirs, etc. Sprays insecticides, weed killers; strips oil-base paints; sterilizes utensils and equipment.

FEATURES - Ready for operation less than a minute after starting. Adaptable to a variety of driving mech-

SYNTRON

HYDRAULIC VIBRATION

EXPLOSION PROOF

for use in hazardous atmospheric locations or handling explosive materials.

WATER OR AIR **OPERATED**

Handling bulk materials — hot or cold, dry or damp — to processing machinery.

> "Hydra-Pulse" VIBRATORS



Eliminate arching and plugging in bins, hoppers and chutes.

Valve control of power. From 2400 to 4800 vibrations per minute.

"Hydra-Pulse" VIBRATING FEEDERS



For the controlled feeding of bulk materials - with valve control of rate of flow.

"Hydra-Pulse" FEEDER MACHINES

Complete machines, made up with vibrating feeder, and vibrated hopper.

Valve control of rate of

Write for particulars.

SYNTRON CO. 110 Lexington, Homer City, Pa.

When inquiring check CP 5000 on handy form, pgs. 2-3

WATER HAMMER





Used and specified on hundreds of new buildings—and installed on thousands of old buildings to prevent costly "Water Hammer"—the Williams-Hager Flanged Silent Check Valve will solve your problem, too! Write for new technical bulletin.

THE WILLIAMS GAUGE CO.

Pump Valves... Water Gauges... Gauge Cocks... Steam Traps... Pump Governors ... Feed Water Regulators... Water Columns

3015 PENNSYLVANIA AVE. · PITTSBURGH (12), PA.

When inquiring check CP 5001 on handy form, pgs. 2-3

Processing Equipment

anisms and propellants. Readily mobile or installed permanently. Only prerequisites for installation are ordinary electric light outlet and service cold water supply connection.

DESCRIPTION — Full-powered, extra-heavy-duty unit offering choice of oil or natural gas burner, electric motor or gasoline engine driven mechanism. Welded construction. Accessible working parts. Continuous electric spark ignition. Non-clogging heating coil. Pressure atomizing oil burner.

Normal operating pressure, 80 to 120 lbs. Water capacity, 90 gph. Optional equipment includes Adjusta-Blast gun for powerful flushing and rinsing action and super-capacity up to 480 gph for cleaning jobs. Capacities of concentrated compound tank and fuel tank, 13 gals. each. Fuel tank not used on gas-fired unit.

Has 25' of oil resisting, flexible steam hose, 10' rubbercovered drop cord with plug-in, large semi-steel wheels and steering tongue, continuous-duty electric motor, etc. Instantly adjustable pressure control and compound solution feed. Model JO.

SOURCE — Product of Homestead Valve Manufacturing Company, Dept. CP, Caraopolis, Pa. . . . or for more information check CP 5002 on handy form, pages 2 and 3.

Tool Bit Slices Metal Like Knife to Depths 3 Times Its Size

Pre-sharpened 3%" size takes 1-1/8" cut, under power, in cold rolled steel

USES — Pre-sharpened shearcutting tool bits for use on copper, brass, bronze, plastics, cast iron, steel, other ferrous and non-ferrous alloys, without changing the original grind.

For cutting-depths up to three times the nominal size of the tool bit used. For example, a 3/8" bit will take a 11/8" cut, under power feed, in cold rolled steel.

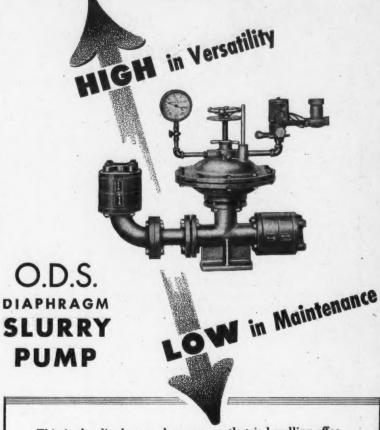
FEATURES — Reduces labor costs. Eliminates costly special tools and grindings often used for cutting various metals. Faster cutting saves up to 50% in production time, up to 70% and more in power consumption, manufacturer reports. Also saves regrinding time.

Holds precision tolerances, often eliminating finishing cuts. Absence of generated heat saves wear and tear on valuable machine tools. Prevents digging-in and chattering. Experimentation is said to make it possible for a novice to achieve results comparable with those obtained by a skilled machinist.

DESCRIPTION — Uses principle of molecular cleavage to slice metal with a knife-like action, rather than chiseling it off by conventional metal-rupturing methods. Made from 18-4-1 plus 10% Cobalt steel (high Cobalt high speed steel). A standard size tool with scientifically pre-sharpened cutting edge and chip pressure channel to assure true shearcutting.

Action of tool in removing the chip tends to keep cutting edge sharp. Takes heavy cuts with extreme ease. Bits are made to fit a standard tool holder.

SOURCE — A development of Shearcut Tool Company, Dept. CP, Box 746, Reseda Post Office, Los Angeles, Calif. . . . or for more information check CP 5003 on handy form, pages 2 and 3.



This is the diaphragm slurry pump that is handling effectively such products as: aluminum hydrate, magnesium chloride, sodium tungstate, sodium sulphate, various metallurgical slurries; sugar, salt, organic and inorganic products; hydrochloric, sulphuric, phosphoric acids; and cubed vegetable soup.

The diaphragm is actuated in timed pulses by either air or gas pressure, by vacuum, or by a combination of both. It is designed to pump against heads up to 200 feet and to charge either by gravity or against lifts up to 15 feet.

Low maintenance features include: (1) no mechanical linkage to the diaphragm; (2) uniform force on diaphragm; (3) no holes punched in the diaphragm; (4) ample clearance in ball valves for passage of solid matter; (5) no motor, stuffing box, packing or high speed moving parts.

With several sizes from 1 to 3 inches, you can find in a single unit or battery the capacity required for your slurry pumping job. Write for Bulletin 309.

Shipment from Eastern or Western Factory!

OLIVER UNITED FILTERS

New York 18, N. Y. 33 West 42nd Street

San Francisco 11 California Sales & Manufacturing
Representative:
E. Long Limited
Orillia, Canada

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221 N. LaSalle Street
Western Sales Division
Oakland 1, Calif.
2900 Glascock Street

Factories: Oakland, Calif. a Hauleton, Pa. a Orillia, Canada a Melbourne, Australia

When inquiring check CP 5004 on handy form, pgs. 2-3



FOR AUTOMATIC OPERATION OF VALVES, DAMPERS, LOUVRES, ETC.

A heavy-duty motorized gear reducer complete in one compact assembly with required electrical control circuit to operate from either remote push buttons or standard measuring instruments such as pyrometers, flow switches, draft gages, etc. 4 sizes available with torgue outputs from 100 to 1500 lbs. ft. Type of control operation may be either On-Off, 3-position or proportional. Mounting brackets, levers and linkage may be furnished.

REQUEST BULLETIN G-50



When inquiring check CP 5005 on handy form, pgs. 2-3

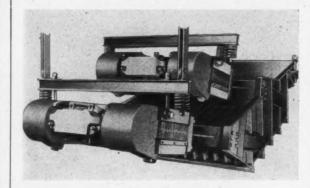
THE MARLEY COMPANY, INC.

Processing Equipment

Vibratory Grizzly Separates Big Volume Crusher Feeds

Heavy-duty, double-magnet electric unit operates on 220 or 440 volts AC

USES - Heavy-duty vibratory grizzly feeder, designed especially for large capacity separation of crusher feeds. DESCRIPTION - F-55 double-magnet, electric. Latest addition to manufacturer's line which includes models F-33, F-44 and F-45 vibratory grizzly feeders.



F-55 heavy-duty vibratory grizzly feeder

Available in different sizes and styles, these include single or double magnet units with magnets mounted above or below deck. All units feature variable-control

ACID-PROOF and Cost-Resistant! **Fansteel** tantalum

Tantalum condensers, like other tantalum equipment units (heaters, coolers, evaporators), are repeatedly proving that extremely corrosive materials can be processed efficiently without equipment failure or product contamination resulting from corrosion. To these outstanding advantages, the records add another important factor: cost-resistance!

Initial costs of tantalum equipment are not at all "out of line." Overall costs, resulting from long, trouble-free service, minimum shutdowns, repairs and replacements, are surprisingly low. Fansteel engineers are at your service for designs and recommendations. An informative booklet, "The Metal Tantalum," is available upon request. Fansteel Metallurgical Corporation, North Chicago, Illinois.



SO

HIGH EFFICIENCY In small space is characteristic of Tantalum Condensers. Dissipa-tion of 120,000 Btu per sq. ft. per how is common performance with HCl or HNO2

USE TANTALUM WITH ECONOMY for most acid solutions and corrosive gases or vapors, except HF, alkalis, or substances containing free SO3.

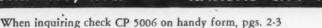


When inquiring check CP 5007 on handy form, pgs. 2-3





KANSAS CITY 15, KANSAS





Here is an economical, quick and sensible way to empty drums, barrels and tanks without mess, splash or accident-provoking tilting.

And this pump stops evaporation losses. A lift of the handle drains pump and automatically seals contents inside.

Requires no priming, has no leather or rotating parts to wear out. Sturdily constructed for long, trouble-free service.

Price includes nozzle, 8 foot hose with static wire, end fitting and special suction pipe for a 3/4" opening. \$14.25

ORDER TODAY DIRECT FROM:



2710 W. Huntingdon Street · Phila. 32, Pa. RESPIRATORS . PUMPS . GOGGLES . SHIELDS . GLOVES . APRONS . HELMETS

When inquiring check CP 5008 on handy form, pgs. 2-3

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14.25

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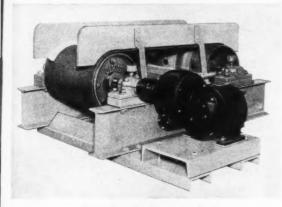
iew

of feed-rate with either full or partial grizzly decks. Operation is from 220 or 440 volt AC. Small models F-1, F-21 and F-22 can also be operated from 110 volt AC.

SOURCE — Made by Syntron Company, Dept. CP, 111 Lexington, Homer City, Pa., . . . or for more information check CP 5009 on handy form, pages 2 and 3.

Magnet-pulleys Purge Plastics, Clay and Chemicals of Iron

Units 12 to 60" wide, 12 to 30" in diameter, install at hopper, conveyor-discharge



Magnetic pulley-type separator

USES — Horizontal and inclined magnetic pulley-type separators for removing tramp iron from plastics, chemicals, rubber, clay, sand, cement, coal, ore, slag, rock.

For installation at discharge of chutes, hoppers and conveyor belts. Also for feeding by hand or by material handling devices. For purification of product and protection of machinery.

FEATURES — Non-electric. Self-contained and automatic. Manufacturer guarantees magnetic permanence for life of pulleys.

DESCRIPTION — Available with belts of any desired length, in widths ranging from 12 to 60". Pulley diameters are from 12 to 30", standard. Unit incorporates an Alnico permanent magnetic pulley, idler pulley, endless belt and drive.

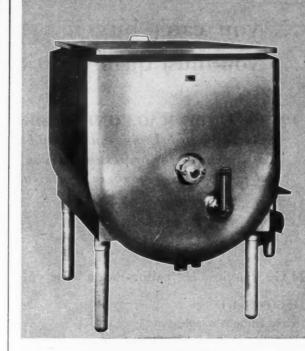
SOURCE — Manufactured by Dings Magnetic Separator Company, Dept. CP, 4740 W. McGeogh Ave., Milwaukee 14, Wis. . . . or for more information check CP 5010 on handy form, pages 2 and 3.

Gives Technical Data, Handling Information on Commercial Lots of sec-Butylbenzene

Technical data and handling information concerning sec-Butylbenzene, available in commercial quantities, is revealed in a new technical bulletin. Literature lists properties and reactions, and presents information concerning containers, specifications, storage conditions and chemical reactions.

Technical Bulletin C-7-104, issued by Chemical Division, Koppers Company, Inc., Dept. CP, Pittsburgh 19, Pa. When inquiring check CP 5011 on handy form, pages 2 and 3.

Another step forward in chemical processing



THE NEW "CHR" JACKETED

SAN-I-TANK

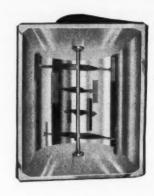
HAS THESE ADVANTAGES

- 1. GREATER CAPACITY IN LESS SPACE
- 2. STAINLESS STEEL WELDED CONSTRUCTION
- 3. GUARANTEED AGAINST RUST AND CORROSION
- 4. BUILT LOW FOR FAST, CONVENIENT OPERATION
- 5. SMOOTH, HIGHLY POLISHED INTERIOR
- 6. NO PROTRUDING COILS
- 7. EFFICIENT MULTIPLE MIXING PADDLES
- 8. SPECIAL HIGH-PRESSURE JACKET

The CHR San-I-Tank is an entirely new design in jacketed tanks for processing liquid chemicals; either cooking or cooling. Operation is simple, convenient and fast . . . production is increased. The special construction of the jacket which is welded directly to the inner tank permits maximum "flooded-surface" contact. Tests have proven that a full tank of light liquid can be brought up to boiling within the short time of thirty minutes. Two inches of permanent glass-wool insulation prevent heat loss between the inner and outer shell of the tank and protect the operator.

At the right is a top view of the CHR Tank showing the smooth, highly polished stainless steel interior. There are no coils to clog or collect unsanitary waste. A series of eight heavy duty mixing paddles are arranged to speed processing by constantly agitating the liquid against the heated tank jacket. Scraper blades on the paddles prevent the mixture from sticking to the tank walls. CHR Jacketed Tanks are also available with propeller type agitator for mixing light chemicals.

Investigate this new tank before you buy. Send today for complete information.





THE FINEST EQUIPMENT FOR CHEMICAL PROCESSORS

Type CJ Stainless Steel Jacketed Tank is a new, proven development for rapid cooking and mixing of liquid products. Tanks are equipped with vibrationless Rotary Seal Agitators. Working Capacities from 60 to 1,000 gallons. These sturdy, stainless steel Stock Pots will give you a lifetime of use. They are guaranteed rustproof and nanocrosive and can be equipped with stainless steel nipples, covers and casters. Stock Pots come in 5, 10, 20, 30 and 50 gallon capacities.



STAIRLESS STEEL SAN-I-TARKS

RVING THESE INDUSTRIES, BEVERAGE . MILK . FOOD . DRUGS . CHEMICALS . COSMETICS

METAL GLASS PRODUCTS COMPANY

GENERAL OFFICES

BELDING 2, MICHIGAN

When inquiring check CP 5012 on handy form, pgs. 2-3

This is YOUR Magazine



... you can't buy it

... you must qualify for it

It's the ONLY MAGAZINE devoted exclusively to belting you men who are responsible for processing, its control and development in chemical processing plants.

CHEMICAL PROCESSING Preview is "tailor-made" for you

Everything in it is pertinent to chemical processing operations

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actual chemical processing manufacturing.

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In every issue there are 150 to 200 terse, technically accurate articles . . . all staff written . . . all dealing with chemical processing or its control.

Its editorial content covers a wide range of subjects

Every issue of CHEMICAL PROCESSING Preview contains 150 to 200 terse, technically accurate, interesting and easy-to-read articles on:

New Solutions of Plant Problems . . . "installationtype" articles - giving actual examples of "how it was done better"

Materials . . . reports on developments in materials that make for better processing.

. . . And, of course, many other subjects.

But turn to Pages 4 and 5 . . . read "Highlights in This Issue" and "Contents". These will give you the whole story of this issue.

It's B-R-I-E-F

Every article is complete and gives all essential information . . . but it is terse, to-the-point. No long articles . . . all unnecessary and incidental information, all "long-windedness" is edited out . . . only facts necessary to a clear understanding of the subject are given ... so a busy man can get ideas without wasting time. Note how the articles in the "New Solutions" section are presented — (a) problems; (b) the solution as worked out; (c) results obtained; (d) source of more information.

Contrast this with the long articles covering many pages, but giving no more essential information, as you will find such subjects handled in contemporary publications. You can get a dozen ideas from these terse articles in the same time it would take to read one long article.

Every article is "Staff Written"

That's why every article is "tailored" to your use. CHEMICAL PROCESSING Preview's editors dig out the essential facts and present them in a few words . . . it's the most difficult kind of editing and writing. But it pays dividends in the time it saves readers. Remember — no hard-to-read, long articles by untrained writers. Everything is "staff written" by our editors.

Special Reader Services

- 1. When you want more information on anything you read about in this issue, editorially or advertisingly, use the "information request slip" between 2 and 3.
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KEEP ABREAST of DEVELOPMENTS in PROCESSES, TECHNIQUES, MATERIALS, EQUIPMENT . . . Read CHEMICAL PROCESSING Preview Every Month

When inquiring check CP 5013 on handy form, pgs. 2-3

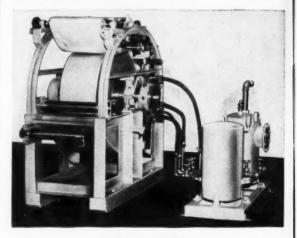
Processing Equipment

Pilot Plant Rotary Vacuum Filters Thin Slimes, etc.

String discharge feature handles difficult operations cleanly, efficiently

USES - Pilot plant rotary vacuum filter, also for small or temporary filtering operations.

Handles practically any rotary filtration operation, including difficult cakes and thin slimes. Accessory equipment adapts unit for special filtration problems such as close moisture control for clay bodies and raw clay; steam sterilization; handling of volatile materials, extremely high flows of filtrates, etc.



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Rotary vacuum filter

FEATURES - Highly flexible. String discharge handles difficult operations cleanly and efficiently, with long cloth life. Washing mechanism produces clean cake and good recovery of solubles.

Manufacturer offers pilot plant filters on monthly rental, if desired, allows for time lost in starting up process.

DESCRIPTION — Pilot plant continuous rotary vacuum filter. Drum diameter, 3'; drum width, 1'; approximately 10 sq. ft. drum. Type 316 stainless steel.

Principle difference between this and other rotary vacuum filters is the string discharge feature. Endless strings about 1/2" apart encircle the discharge roll and cloth-covered drum. Cake builds up on these strings which, as they leave the drum to pass over the discharge roll, lift cake away from the cloth. Cake is next freed from strings at the discharge roll, where strings veer sharply inward to be fed back to underside of drum through teeth of an aligning comb.

Time required for filtering and dewatering varies according to slurry handled. Accessory equipment includes washing mechanism which disconnects when not required; also drum dryer combination, repuddling mechanism, and facilities for compression dewatering and continuous drying. Using basic filter elements, practically any design is said to be possible. Bulletin 102 includes large cutaway drawing of over-all unit, with explanatory text.

SOURCE - Product of Filtration Engineers, Inc., Dept. CP, 858 Summer Ave., Newark 4, N. J. . . . or for more information check CP 5014 on handy form, pages 2 and 3.

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Hydraulic Power Midget Takes 3 gpm Oil at 1200 rpm, 1000 psi

6 x 7 x 9" unit is quickly, easily applied to arbor presses, hydraulic clamping, small balers



6 x 7 x 9" hydraulic power unit

uses such as lift-loading.

USES - Midget hydraulic power unit for use in connection with arbor presses, hydraulic clamping devices, forming, straightening and bending operations, light- material handling units, small balers, pressure inserting equipment, general plant maintenance, etc.

Has applications in certain types of remote control, and with machinery involving functional push, pull or lift requirements. Through application of auxiliary equipment, it is possible to adapt various machines to new and additional

FEATURES — Versatile. Quickly and easily applied. Adapts existing machinery to new uses, wider utility.

DESCRIPTION — Measures 6 x 7 x 9", yet is capable of 1000 psi with a capacity of 3 gals. oil per min. at 1200 rpm, or 4½ gals. per min. at 1800 rpm. At 1200 rpm it requires approximately 21/2 hp.

Unit consists of manufacturer-developed gear pump with hardened and ground gears running in bronze bearings; a compact, sturdy valve housing to protect check valves which prevent momentary drop of ram while ram is shifted; also a 4-way control valve which permits use of a double-acting cylinder, hydraulically actuated in both directions.

Remote control is through flexible or stationary linkage leading to lever mounted conveniently near driver: Vbelt pulley for driving power unit from fan shaft or power take-off. Positive clutch action for cut-out when unit is not in use.

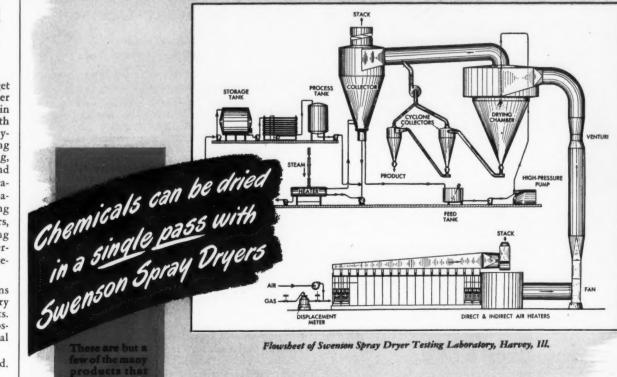
SOURCE — Developed by Hydro-Power Division, The Hydraulic Press Mfg. Company, Dept. CP, Springfield, O. . . . or for more information check CP 5015 on handy form, pages 2 and 3.

Rubber Products Catalog Covers Belting, Hose, Tank Linings, Molded Products

Transmission and conveyor belting, V-belts, hose, engineered molded products, rubber roll coverings, tank linings and abrasive wheels are among the products stressed in a condensed catalog of mechanical rubber goods and special items.

Sixth edition of "Manhattan Rubber Products for Industry," issued by Manhattan Rubber Division, Raybestos-Manhattan, Inc., Dept. CP, Passaic, N. J. When inquiring specify CP 5016 on handy form, pages 2 and 3.

30 SECONDS from Liquid to Powder!



Flowsbeet of Swenson Spray Dryer Testing Laboratory, Harvey, 111.

No preliminary processing is necessary. The Swenson Gray-Jensen Spray Dryer will handle any materials that can be pumped-solutions, emulsions, slurries, or pulps. In less than 30 seconds it converts such materials into thoroughly dry homogeneous powders that require no milling.

Drying takes place at or near wet bulb temperatures, and the equipment is designed to make efficient use of heat input, discharging fully saturated air without powder entrainment.

Have you a process that can benefit from spray drying? Swenson engineers will gladly co-operate with you through the facilities of the Swenson Spray Dryer Research Plant.



have been suc-cessfully spray

Halfa extract

alcium carbonate

Dyes and dyestuffs

Manganese sulfate

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SWENSON EVAPORATOR CO. Division of WHITING CORPORATION Harvey, III.

Export Departments 30 Church Street, New York 7, N. Y.

When inquiring check CP 5017 on handy form, pgs. 2-3

Save money 4 ways with Farval Centralized Lubrication

POR more than 20 years, Farval has been saving money for users. Through efficient, dependable lubrication of machines and industrial equipment of all kinds, Farval saves 4 ways: It saves oiling labor, it saves lubricant, it reduces bearing expense, it eliminates down time.

The Farval System is a positive mechanical method of delivering oil or grease under pressure to a group of bearings from one Central Station, in exact quantities, as often as desired. It consists of a central pumping unit, two main supply lines and a measuring valve for each bearing.

Write for Free Catalog No. 25 and Case Studies. THE FARVAL CORPORATION, 3257 East 80th Street, Cleveland 4, Ohio. Affiliate of The Cleveland Worms Geory Co. Industrial Worm Georgies. In Canada: Persone Revolvers Limited.



When inquiring check CP 5018 on handy form, pgs. 2-3

Write for this

FREE bulletin

Processing Equipment

Feeds Chemicals in Solution or Slurry for Water Treatment

Motor raises and lowers decanting pipe for positive, non-slip, metered feed

USES — Liquid chemical feeder for water-treatment systems, liquid conditioning processes.

For feeding chemicals, either in solution or suspension (slurry) form, to water that is to be chemically treated for softening or clarification. Equally adaptable to constant or proportionating rate control systems of chemical feed.

FEATURES — Does not require manual raising of decanting pipe after chemical feed tank is emptied. Hence, eliminates need for operator to climb atop a sometimes slippery tank and manually turn crank to raise decanting pipe. Also eliminates error due to improper winding of cable on drum. Assures positive non-slip feed. Facilitates rapid changes in feeding rate, whether minute or large. Control arrangement permits meter to be located where desired, at the same time assuring greater meter accuracy through elimination of load. Feeding rates accurately maintained.

DESCRIPTION — Unit is "heart" of a chemical treatment system employing coagulation, precipitation and absorption. A totally-enclosed, motor-operated gear-reduction unit of special design, it is mounted atop a chemical feed tank. A feed sprocket engages with a chain, one end of which is connected to drawoff head



NEW! Alnico Magnetic PERMA • PULLEY!

Here's the low cost, positive way to take iron out of materials carried on belt conveyors. No wiring . . . no electrical accessories . . . completely automatic . . . no maintenance or attention . . . tremendous magnetic strength. You can install it and forget it! Available in 53 sizes ready to install . . . Send for NEW BULLETIN 260-A.

DINGS MAGNETIC SEPARATOR COMPANY 4731 W. McGeogh Ave., Milwaukee 14, Wis. 50 Years' Magnetic Separator Experience! (MostPowerful Non-Electric Pulley on the Market!)

PROTECTS crushers, grinders, pulverizers, stokers, other machinery.

REMOVES IRON from foods, feeds, grain, chemicals, coal, rock, ore, sand, scrap, slag, cement, sugar, etc.



Dings -

When inquiring check CP 5020 on handy form, pgs. 2-3

PYREX brand Glass Pipe... The ONLY satisfactory material

Its economy for extremely corrosive service again emphasized by...

Hilton Davis Chemical Co.

ARE YOU skeptical about using PYREX brand glass pipe in your plant process? Consider the experience of Hilton Davis Chemical Company, Cincinnati, Ohio. After handling the transfer of chlorinated solvents for several years, PYREX pipe is considered "the only practical material." It not only withstands corrosion better but visibility has not been marred by etching. That means that its service life remains unimpaired.

There is no test more severe on any material than chlorination, but whether your problem is chlorination or processing of pharmaceuticals, sensitive drugs, hydrochloric acid or similar products, Pyrex brand glass pipe is the practical solution.

Pyrex pipe is available in 1, 1½, 2, 3 and 4 inches I.D. in standard lengths up to 10 feet. A complete line of fittings for all sizes is also available and includes elbows, tees, laterals, crosses and U-bends. On the market for nearly 20 years, Pyrex pipe is in use in hundreds of chemical and food plants.

For complete details, ask for Bulletin 1A-3.



CORNING GLASS WORKS, CORNING, N.Y.
SALES OFFICES: NEW YORK, CHICAGO, SAN FRANCISCO

PYREX GLASS PIPE

TECHNICAL PRODUCTS DIVISION. GAUGE GLASSES - GLASS PIPE - LIGHTINGWARE - SEGNALWARE LABORATORY GLASSWARE - OPTICAL GLASS - GLASS COMPONENTS

When inquiring check CP 5019 on handy form, pgs. 2-3



When inquiring check CP 5021 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

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-Electric

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of a decanting pipe. Opposite end is connected to levelposition indicator which rises as decanting pipe lowers.

Motor lowers and raises top of the pipe, lowering it slowly for predetermined feed-rate; raising it at greatly increased speed by changing handle-position of a selector switch when tank is empty. A signal lamp lights during the upward movement, going out when pipe is at top position. This notifies operator that tank is



Chemical feeder

ready for recharging, also assures him that plant is not operating without feeding chemicals.

Reset timer has an adjustable micrometer dial which can be located wherever convenient. Feeder is electrically remote controlled, rather than mechanically direct-operated. It employs a synchronous motor which runs at constant speed despite variations in load and line voltage.

SOURCE — Developed by Liquid Conditioning Corporation, Dept. CP, 114 E. Price St., Linden, N. J., . . . or for more information check CP 5022 on handy form, pages 2 and 3.

Graph Compares Cost of Paint with Special Corrosive-resistant Compound

Opportunity to compare costs of maintenance painting by conventional and "Prufcoat" methods is offered in the form of a Protecto-Graph kit, which is furnished on request. Users of the kit graph out maintenance painting costs for any 5 to 10 year period, using information available from their own files. The filled-in graph is then returned to the manufacturer, where costs of doing the same job with "Prufcoat" are figured, added to the graph, and returned.

Savings of 50, 60 and 70% are possible when these coatings are used to combat corrosive conditions caused by acids, alkalies, oil or water, manufacturer reports. Kit, with simple instructions and blank graph, issued by Prufcoat Laboratories, Inc., Dept. CP, 63 Main St., Cambridge, Mass. When inquiring specify CP 5023 on handy form, pages 2 and 3.



... Yes WeldELLS have everything

TAYLOR FORGE

General Offices & Works: Chicago 90, Ill. (P.O. Box 485)

EASTERN PLANT: CARNEGIE: PA.

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New York: 50 Church Street Philadelphia: Broad Street Station Bldg. Chicago District Sales: 208 S. LaSalle Street
Houston: City National Bank Bldg. Los Angeles: Subway Terminal Bldg.

When inquiring check CP 5024 on handy form, pgs. 2-3



Nylon Filter Cloth can be supplied in several weaves and weights and in rolls or made-up filter element covers with all Nylon-Thread sewing.

Literature and pilot test samples of FM Nylon Filter Cloth are available on request.



Felt Building Salt Lake City 1, Utah 2627 West 19th Street Chicago 8, Illinois 1008 Keith Building Cincinnati 2, Ohio

When inquiring check CP 5025 on handy form, pgs. 2-3

Processing Equipment

Carbon Determinator Is Simplified Design

Has 1-piece burette-absorber, simple combustion gas cooler



Improved carbon determinator

USES — Carbon determinator for high-precision carbon analysis. Burettes in several ranges facilitate use with cast iron, steel, low carbon alloys and organic materials.

FEATURES — Simplification and redesign retain basic advantages of previous models, yet give improved operating conditions, increased reliability, higher precision.

Eliminates errors due to temperature changes during analysis. Cooler requires no attention. Gas cannot expand or contract during analysis due to heating or cooling. Levelling-off remains easy and accurate. No carryover of error from one analysis to next.

DESCRIPTION — Gases enter burette at room temperature due to addition of an extremely simple combustion gas cooler. One-piece burette-absorber prevents temperature differences between these units.

As previously, compensation for atmospheric pressure is automatic. Single operation returns absorbing liquid to exact starting point and brings burette to atmospheric pressure for final reading.

SOURCE — Development of Harry W. Dietert Company, Dept. CP, 9330 Roselawn Ave., Detroit 4, Mich., . . . or for more information check CP 5026 on handy form, pages 2 and 3.



What is your filtration problem? Sperry has the answer can design and manufacture the filter press to fit your needs.

We study your specific requirements. We analyze your filterable mixture—make complete laboratory tests—reproduce exact conditions under which your material will be filtered. Then Sperry engineers go to work on the design of your filter press. The result is efficient, economical filtration for your products.

Send Sperry a sample of your material. An analysis may lead to better filter press design. There's no obligation.

D. R. Sperry & Company, Batavia, Illinois
Filtration Engineers for over 50 years



When inquiring check CP 5027 on handy form, pgs. 2-3



Today for Bulletin 102B
When it's magnetic protection . . see Eriez first
See our Booth No. 78 — American Ceramic Society

Golden Jubilee Exposition.

ERIEZ MANUFACTURING COMPANY

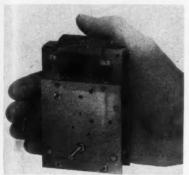
16 East 12th Street + Ety Pennsylvania

When inquiring check CP 5028 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

Palm-size Fractional hp Motor Has High Torque Capacity

Magnetic clutch prevents over-travel of output shaft with de-energizing



High torque capacity motor

y lead

gs. 2-3

Vrite

028

USES — High torque capacity, fractional hp motor for directional antennae, numerous diverse applications.

FEATURES — Compact enough to fit in the hand.

DESCRIPTION—Shaded pole, induction-type unit with a stalling torque, at rated voltage, of 75

inch-ounces. Magnetic clutch prevents over-travel of output shaft with de-energizing of motor. This, of course, does not include gear train coast when motor is running free. With 20 watts input at 115 volts, 60 cycle AC, no-load speed is 20 rpm on output shaft. Lower input wattages are available at correspondingly lower stalling torques, with output shaft speed at no-load substantially unchanged.

Aluminum construction, with built-in gear train. Various gear ratios can be furnished. Oil-impregnated, powdered metal bearings. Motor may be attached to any suitable bracket by means of 3 mounting studs tapped with No. 4 x 36 thread.

SOURCE — Product of T. C. Smith Manufacturing Company, c/o T. C. Smith, president, Dept. CP, 920 Washington St., Springfield, Ill., . . . or for more information check CP 5029 on handy form, pages 2 and 3.

Alclad Aluminum Shipping Drum Provides More Product Protection

Argon arc-weld produces a strong, clean and smooth joint, both inside and outside

USES — May be used as a chemical shipping container where it is necessary to guard the character of the product.

FEATURES — Withstands rough handling. Argon arc-weld is strong, clean, smooth, inside and outside.

DESCRIPTION — This is an improved construction of this company's standard shipping drum. This adaptation guards the character of the product with a high purity liner over a base layer of strong aluminum alloy.

Alclad aluminum sheet is used to make these drums; coating is bonded on either one or both sides as an integral part of the alloy base.

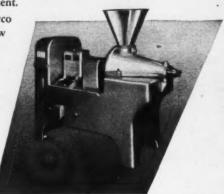
Argon arc welding procedure eliminates the use of flux, thus making it possible to adapt it to a semi-automatic machine weld around the middle of the drum.

SOURCE — Aluminum Company of America, Dept. CP, Pittsburgh 19, Pa., . . . or for more information check CP 5030 on handy form, pages 2 and 3.

ANY costly batch processes in the process industries can be converted into fast, efficient, low-cost continuous operations by means of the new FLOW-MASTER Roto-Feed Continuous Mixer. It will handle liquids as fluid as water, or materials heavier than viscous bread dough, mixing and discharging at a controlled rate up to 1000 GPH. Use it to feed other FLOW-MASTER units or other equipment.

If you have a mixing problem, the Marco laboratories are prepared to suggest how you can save time, lower costs, and improve the quality of your products with the FLOW-MASTER Roto-Feed Continuous Mixer.

FLOW-MASTER Roto-Feed Continuous Mixer — Capacity 5-1000 GPH. Stainless, Sanitary, Easy to Clean.





MARCO CO. Inc.
11 Third Street, Wilmington 50, Del.

When inquiring check CP 5031 on handy form, pgs. 2-3

give you MORE PROTECTION per dollar

Ansul Dry Chemical Fire Extinguishers give you more protection...pound for pound...dollar for dollar ...than any other extinguisher of comparable size.

In addition ... Ansul Fire Extinguishers provide the best first-aid protection:

 For hazards involving alcohols, solvents, gasoline, oils, asphalts and greases.

• For electrical equipment hazards.

Ansul Fire Extinguishers have the highest ratings for effectiveness on flammable liquid fires, based on tests conducted by nationally recognized approval agencies. The longer range stream of dry chemical is effective in winds and drafts.

After use, Ansul Dry Chemical Fire Extinguishers can be recharged "on the spot"...providing continuing protection...and annual recharging of Ansul extinguishers is NOT

necessary.

Safe to use...non-toxic, non-corrosive, non-abrasive.

Write for more information. You will receive factual data on how Ansul Dry Chemical Extinguishers will cut your fire protection costs.

Listed and Approved by Underwriters' Laboratories and Factory Mutual Laboratories.



ANSUL CHEMICAL COMPANY

When inquiring check CP 5032 on handy form, pgs. 2-3

Processing Equipment

Fluorescent and Incandescent Lighting, Layout Data, Contained in 48-Page Catalog

Fluorescent and incandescent lighting equipment, also complete photometric data and layout information are contained in a 36-page, illustrated catalog. All equipment designed with maximum shielding to prevent glare. "Overall Lighting." Catalog 48.

Issued by The F. W. Wakefield Brass Company, Dept. CP, Vermilion, Ohio. When inquiring specify CP 5033 on handy form, pages 2 and 3.

Safety-Relief Valve Handles Inlet Pressures to 2000 lbs.

Also built for corrosives, temperatures to 900° F., in sizes 1-1/2 x 2" to 6 x 8"

USES - Safetyrelief valve for handling in let pressures up to 2000 lbs., temperatures up to 900° F., and corrosive liquids, vapors or gases. Modified forms resist action of specific acids or caustics, or maintain fluid temperature for very viscous materials.

FEATURES — Capacity certified by actual test at National Board of Boiler and Pressure Vessel Inspectors Laboratories, manufacturer reports. Special design permits use of smaller valves than customary.

DESCRIPTION — Available in sizes

from 1½ x 2" to 6 x 8". Parts are fully interchangeable. Combination of nozzle and inverted cone or secondary nozzle makes maximum use of kinetic energy of discharge to effect high lift and full capacity without adjustments. Coefficient of flow efficiency established

Safety-relief valve

at 971/2.

Made of cast steel with stainless steel trim. Nozzle body is long-neck to permit proper nozzle flow without restriction. Fully-ribbed body absorbs piping stresses. Stainless steel baffle plate restricts flow of vapors into spring chamber. Alignment spool, hardened steel threaded into the disc, holds both disc and stem in perfect alignment with each other and with guide cylinder, preventing leakage, seeping. 2½ to 1 guide ratio of disc guide assures full lift, positive reseating.

Protected loading spring is long, low-stressed, maintaining accurate set pressure. A modification of the valve



The Series 697 Centrifugal Acid Pump will handle all liquid corrosives except fluorides and hot caustics. No metallic contamination of solutions is possible as all parts coming in contact with liquids are made of Ceratherm-500, heat-shock-resistant chemical stoneware. The dense, strong, non-porous ceramic body is protected against mechanical damage by a heavy cast iron outer housing. The outer housing is protected with Tygon Paint.

The Series 697 Pump is available in either belt-driven or motor-driven styles, in four sizes with GPM capacities ranging from 30 to 600.



When inquiring check CP 5034 on handy form, pgs. 2-3

has all working parts isolated behind vapor-proof curtain of rubber, neoprene or any flexible material which withstands action of specific acids, etc. To maintain fluid temperature for very viscous materials, an additional modification has internally mounted steam coils. SOURCE — Manufactured by Farris Engineering Corporation, Dept. CP, 466 Commercial Ave., Palisades Park, N. J. . . or for more information check CP 5035 on handy form, pages 2 and 3.

Roof Ventilators Revolve on Step-type Ball Bearings

Spinning blades expel contaminated air; can be mounted on stacks, roofs of any pitch



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Spinner-type roof ventilator

USES — Spinnertype roof ventilators for drawing hot air, fumes, gases, etc. out of building interiors. For mounting on stacks or on roofs of any pitch.

FEATURES — Construction assures easy propulsion with slightest breath of air.

DESCRIPTION—Vertical, machined shaft on which revolving head or blades are mounted is inserted in a tube filled with weather-resistant lubricant,

and rests on step-type ball bearing. Spinning blades create vacuum, and are shaped and spaced so as to emit contaminated air without permitting entrance of rain or snow.

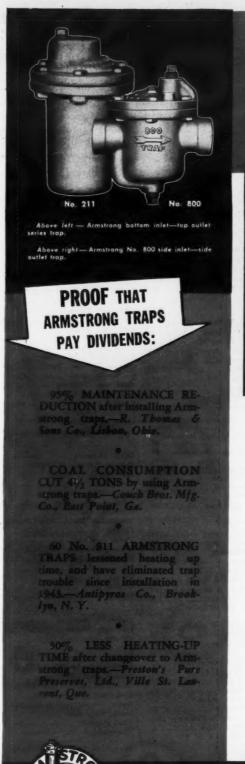
Spinner unit is mounted on square base which is readily cut to fit roofs of any pitch. For mounting on stacks, a circular base is available. Unit is an addition to manufacturer's line of stationary head and truncated "A" type ventilators.

SOURCE — Manufacturer is Warner Ventilator Company, Dept. CP, La Grange, Ind., . . . or for more information check CP 5036 on handy form, pages 2 and 3.

Reveals Uses, Construction of Manganese Bronze Chain for Processing Plants

Uses of manganese bronze pintle and detachable chain in chemical and other processing or manufacturing fields are described in a 4-page bulletin. Its construction for use in power transmission, general conveyor operations, etc., is revealed.

All types of this product are illustrated in detail with drawings, photographs, specifications of standard and special makes. Bulletin 204, issued by Valley Foundry & Machine Works, Inc., Dept. CP, Fresno, Calif. When inquiring specify CP 5037 on handy form, pages 2 and 3.



For Fuel Savings and Maximum Production
INSTALL
STEAM TRAPS
CORRECTLYS

IF STEAM traps are not installed correctly they may fail to do their job — and you lose money.

For fuel savings and maximum production, check your trap installations against the following:

- 1. DO YOU HAVE A TRAP ON EACH UNIT? When you drain more than one unit with a single trap, sluggish heating and low temperatures nearly always result.
- 2. ARE YOUR TRAPS LOCATED CORRECTLY? They should be placed close to and below the unit to provide better drainage and eliminate steam binding.
- 3. DO YOU NEED STRAINERS? If there is sufficient dirt or scale in your lines to interfere with trap operation, Armstrong Y-type strainers should be installed ahead of the traps.
- 4. DO YOU HAVE A BYPASS ON CRITICAL UNITS? Traps should be installed with a bypass. The ARMSTRONG STEAM TRAP BOOK shows the correct methods of installing traps and bypasses. Send for a free copy.

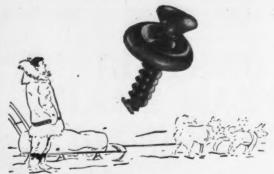
ARMSTRONG MACHINE WORKS

880 Maple Street . Three Rivers, Michigan



No. 4 of a series of advertisements devoted to improving efficiency through better trapping.

When inquiring check CP 5038 on handy form, pgs. 2-3



FROM

FROM THE SUB-ZERO OF DEEP-FREEZE UNITS TO THE SEARING HEAT OF A BLAST FURNACE YOU'LL FIND



resisting the corrosion of varying temperatures, and all other types of corrosion, as well! In tropic climes, in Arctic cold---in acids and alkalies---in every place where corrosion in any form threatens a product or a production setup---that's where Anti-Corrosive fastenings of Stainless Steel, tailored to fit the exact conditions, are on the job, LASTING LONGER — SAVING MONEY!

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Write for catalog and stocklist. Address Anti-Corrosive Metal Products Co., Inc., 52 River Road, Castleton-on-Hudson, N. Y. In Canada, Railway and Power Engineering Corp., Ltd.



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MACHINERY, EQUIPMENT and MATERIALS



Use this "quick-locator" when you want information on a specific type of material, instrument, or processing equipment. Everything discussed in this issue is given here, with page references. After checking the information here, if you want more data you can write manufacturer direct . . . or turn to pgs. 2-3 and use the handy "Information Request Slip." This is a special service provided by the Publisher . . . no obligation or charge, of course. The Publishers contact the proper manufacturers for you . . . information comes to you direct.

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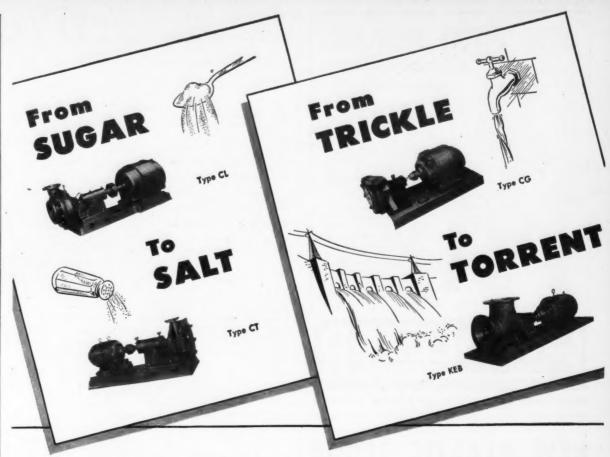
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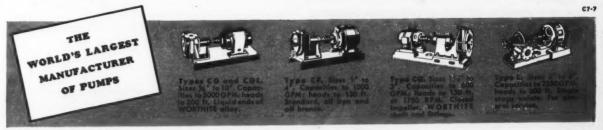
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Emulsifier for Toxaphene

Normally a waxy, semi-solid material, the new Hercules Insecticide Toxaphene can now be solubilized by means of a special emulsifier, Trex 45, developed by Griffin Chemical Co., San Francisco. Solutions of Toxaphene can be emulsified in both water and kerosene solutions.

Caraway Imports Discourage U. S. Growers

Caraway, a scarce item during the war, is now being received in supply from abroad. One domestic grower has now abandoned acreage that has for the last several years yielded a high grade of seed.

Polystyrene Plastic Flower Pots

Plants grow better in polystyrene plastic flower pots, according to tests conducted at the agricultural stations of Ohio University and University of Massachusetts. It is reported that the new pots will retain moisture longer under the hot, dry conditions of the average home.

Advantages to commercial growers are reduced weight in shipping, elimination of breakage and the attractive colors in which they will be available. Introduced and molded from Monsanto Lustron by Rogers Plastic Corp., North Wilbraham, Mass.

How Many Miles Per Lb.?

It probably will be some time before automobile fuel mileage performance will be measured in terms of miles per pound rather than per gallon. However, there are indications that metallic compounds will replace liquid fuels in jet and rocket engines. These compounds are based on boron and aluminum and offer an increase of combustion efficiency per unit up to twenty times that of liquid fuels. (Ohmite News — Ohmite Mfg. Company, Chicago 44, Ill.)

Steering Wheel Gauge Simplifies Parking

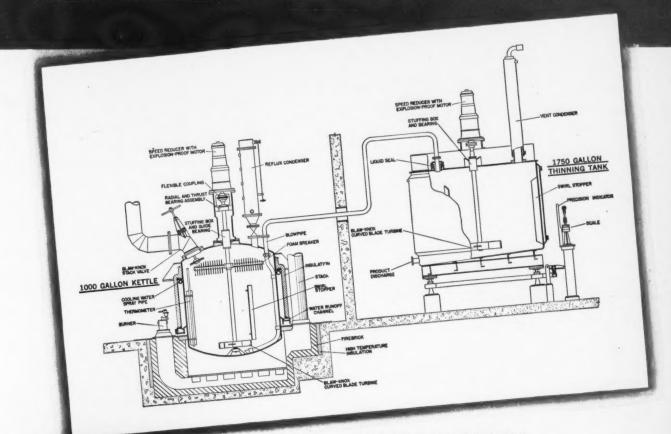
Among recent inventions reported by the National Foundation for Science & Industry is a parking gauge which can be installed on the steering wheel of automobiles. Another invention is a mechanically fed eraser which permits pin-point erasing.

New Pottery Process

A new process sprays a highly fluid suspension of clay against the walls of a porous mold. (Natl. Patent Council, Gary, Ind.)

For more information on product at right, specify CP 5043... see information request blank between pages 2-3.

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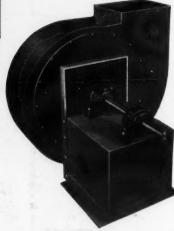


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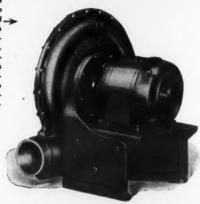


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